

The Milbank Memorial Fund

QUARTERLY

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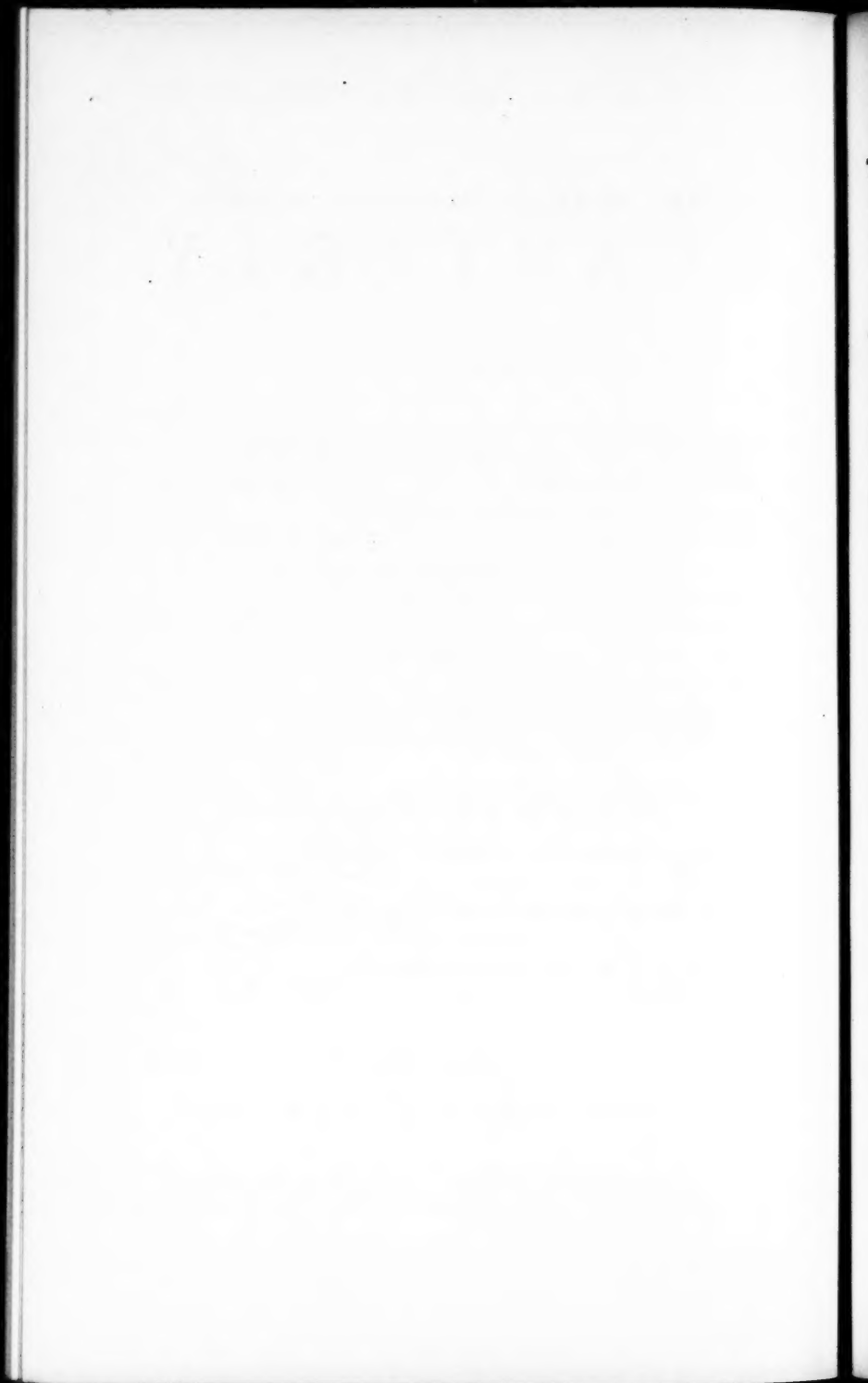
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THE RELATIONSHIP OF THE MILBANK MEMORIAL FUND TO THE FIELD OF HEALTH AND THE MEDICAL PROFESSION¹

by ALBERT G. MILBANK

I

WHEN Dr. Mitchell invited me to speak here tonight I had some misgivings, realizing that, in some quarters, efforts have been made to put on the "spot" Foundations in general and our Fund in particular and that I would be facing a group of doctors, some of whom at least would be harboring the impression that the President of the Milbank Fund must be an officious sort of hybrid in whom ignorance and prejudice are unhappily blended. But the sincerity and cordiality of your introduction, Mr. Chairman, relieves my mind and touches me deeply.

Normally, my preference is to work and not to speak. On the relatively infrequent occasions when I have been persuaded to emerge from my customary obscurity I always feel that I am violating one of the sound precepts given me by my wise father, who used to say that it is better for a man to take a back seat and be discovered than to take a front seat and be found out.

However, when misunderstandings arise and assume regrettable proportions between groups whose interests and purposes call for mutual understanding and cooperation, one's personal preferences should yield to the exigencies of the situation even at the price of compelling you to listen with such patience as you may possess to a layman.

Not long ago, in New York, when the Bellevue-Yorkville Health Center was turned over to the Department of Health I made a passing reference to the subject of which I would speak more fully this evening. In an endeavor to summarize the nature

¹An address given at the Annual Conference of Secretaries of the County Medical Societies of Indiana at Indianapolis, Indiana, on January 27, 1935.

of the complaints against our Fund, which had been voiced privately and publicly, I said that the Fund has been charged with advocating State Medicine; of seeking to demote the members of the medical profession to the level of government clerks; of placing the emphasis on the quantity of medical care rather than on the quality of medical care; of destroying that priceless human as well as traditional professional relationship between doctor and patient which has been one of the glories of the medical profession from time out of mind; of regimenting and sovietizing a group whose training costs more in time and money than the training of almost any other group in the country, and of blaming the doctors because many people do not receive adequate medical care. And all this, it is claimed, is being attempted by a lay organization which is asserted to have little knowledge of medical problems and scant interest in acquiring that knowledge from the only source from which it can be obtained—namely, from the medical profession.

I then added that if all, or any appreciable part, of these charges had any foundation in fact, speaking for myself and for the Directors and staff of the Fund, I would be the first to concede that the medical profession has a just grievance, and I concluded with a denial that the charges have, in fact, any substantial foundation.

This evening I would like to develop affirmatively the position of the Fund in the field of health and the relations it would like to see established between it and all the other groups operating in that field in which, of course, the members of the medical profession are obviously preeminent.

It would be well at the outset to say that our Fund, through its Board of Directors, decided in 1921, for reasons which I will mention later, to make the public aspect of health its major field of interest. At that time Edward W. Sheldon was President of the Fund and Elihu Root was one of the interested and active

Directors. In furtherance of that general policy it set up two auxiliary committees to examine into this general subject, to make recommendations as to procedures calculated to promote the health of the public, and to review from time to time the adequacy and effectiveness of such procedures. The first of these auxiliary committees was a small group called the Technical Board, of which the first chairman was the late Dr. Hermann M. Biggs, and which has met frequently and regularly since its organization. The second of these auxiliary committees was a larger group, called the Advisory Council, of which the late Dr. William H. Welch was the first chairman—a position he filled with great distinction until shortly before his death. The Advisory Council is kept in touch with the activities of the Fund by bulletins released from time to time and meets once a year in a two-day session during which it subjects the program of the Fund to critical analysis and makes suggestions as to future programs.

Both of these committees are made up of representatives from all of the groups actively engaged in the broad field of health—public health, the private practice of medicine, hospitals (public and private), nursing, social and welfare organizations. Whenever a question arises which involves a matter of policy or the expenditure of money the Board of Directors is free to seek the counsel and advice of the Technical Board but the final decision remains with the Directors of the Fund.

For example, the Directors authorized the series of health demonstrations with which you are doubtless familiar and which were designed to ascertain what results could be expected from a coordinated health program in which physicians, public health officers, and voluntary health agencies participated; what such a program would cost and to what extent the community would, after a time, assume such costs. These health demonstrations were authorized by the Directors and, judged by the overwhelming evidence in the files of the Fund received from many sources,

the Directors have no question as to their medical and social value.

As to methods of meeting the costs of medical care, however, a different situation exists. Here the Directors have taken no action, nor, for that matter, has any recommendation on this subject been made to the Directors by the Technical Board. In this matter, the staff of the Fund, with the knowledge and informal approval of the Directors, has conducted a series of studies as to methods in operation in this country and in procedures in operation in many other countries set up to deal with this problem. No final report of these studies has been made. In fact, the studies themselves have not been completed. Interim reports embodying tentative proposals have been released by the staff for the purpose of encouraging discussion and criticism. Therefore the Directors of the Fund are free to take any one of three courses in relation to this subject: (1) They may concur in whole or in part with such conclusions; (2) they may favor some other solution of the problem; or (3) they may abstain from taking any position whatever and simply make the studies of the staff available to those interested in the subject.

II

In order to get a proper perspective of the position the Fund seeks to occupy in the field of health it will not be amiss to take a look at its origin. Spiritually and financially it is the embodiment of a wise, generous, and charming woman who, fifty years ago, began a series of noteworthy gifts which continued uninterruptedly until her death in 1921 and whose carefully considered philanthropic philosophy the Fund, which she established in 1905, adopted as the basis of its own policies.

Elizabeth Milbank Anderson was one of those rare souls who combined a brilliant mind, a love of humanity, a generous nature, and a keen sense of humor. She was an unquestioned individualist but with a profound sense of her social obligations. She mis-

trusted fads and visionary theories as solutions for current problems but the honesty of her mind made it impossible for her to ignore a problem even when its solution called for changes in an established procedure. She was a conservative by inheritance and environment but one who understood that the world does not stand still and that when conditions change the cause of conservatism is best served, not by an unreasoning resistance to any change whatsoever, but rather by a willingness to make reasonable changes, in form and procedure, while preserving the sound principles which, like the eternal verities, persist because they are, in fact, based on truth.

With such a tradition and such an inspiration it would be quite out of character if our Fund should seek to undermine those foundations of the practice of medicine which have been built up, tested and found good over the years, or to discredit the front-line troops upon which every one must rely to win the common fight for better health for the people of the United States.

As often happens in human affairs a shattering personal loss had a profound effect upon Mrs. Anderson's attitude toward philanthropy. Her only son died of diphtheria when he was still a little boy. As her brave spirit rose to meet the most crushing blow that Fate could have dealt her, she began to give reasoned direction to her generous impulses which up to that time had been the result of emotional rather than of rational processes.

From that time on, imperceptibly at first and more obviously as the years went by, she looked upon avoidable sickness and premature death as twin tragedies ever menacing human happiness. Health for all of the people became her paramount interest and preventive medicine began to assume in her mind equal importance with curative medicine.

Poverty always stirred her sympathies, but here again a careful analysis of the causes of poverty placed sickness at the head of the list. So from whatever angle she approached the problem of how

to make the best use of her money she found but one answer—an attack upon sickness as Public Enemy Number One.

This conviction was the genesis of the Fund and this is the trust which the Directors of the Fund assumed and have endeavored to fulfill. A little later it will be well for us to take a "look at the record," as Al Smith says, and see to what extent and in what manner the Directors of the Fund have kept faith with its founder. But, before doing so, it will not be amiss to take a broad and sweeping view of the general conditions and trends going on all about us and of which the question of medical economics is only one phase.

The world is in a turmoil of conflicting philosophies.

The Great War was a titanic physical struggle between armed forces involving also, of course, a conflict of ideas and ideals which, however, was easily stated and easily understood. Today there is being waged an equally titanic struggle between two conflicting schools of thought—Socialism and Individualism. In their wide ramifications and implications they affect the daily lives, habits, and welfare of the average person more directly and more consciously than that devastating physical encounter which ceased on Armistice Day in November, 1918.

This peacetime war is one of the products of the Great War but it is not a consequence of it. Our present battle of conflicting ideas and interests was bound to come sooner or later. The Great War merely hastened it.

That war conscripted the youth of the country who were physically and mentally fit. This ideological war conscripts each and every one of us—old and young, rich and poor, strong and weak. No individual and no group can claim exemption.

And so I submit that the problem of medical economics and its solution represents only one phase of a larger and more general economic, social, and political controversy. That phase, dealing as it does with the subject of the health of the nation, is

naturally of special interest and concern to the members of the medical profession. But it is well to keep in mind that you have not been singled out as an isolated group charged with a failure to measure up to your collective responsibilities. On the contrary, as individuals, you have set a standard of service which entitles you to high honors. To the extent to which, however, you are asked, collectively, to consider ways and means of promoting the health of the nation you are in precisely the same position as is every other professional group and every business enterprise upon which pressure is being brought to bear, in one way or another, to conduct their private affairs in a manner that will promote the public interest.

And now let us look at the proposals which have been submitted by the Fund's staff in so far as they affect the medical profession. In so doing I will give my own understanding of these proposals and the reasons why they have seemed to me worthy of serious consideration.

First: The proposals do not constitute a health insurance plan worked out in all of its administrative and financial details. Rather they are a series of principles on which any plan, if, as, and when developed, should be based. You must have already noted the striking similarity between these principles advocated by members of our staff and the principles recently adopted by the American Medical Association, the American Dental Association, and other professional groups.

Second: The principles advocated by the staff and by organized medicine place marked emphasis on maintaining a continuing personal relationship between the doctor and his patient and, therefore, on this all-important point the proposals are calculated to maintain the status quo.

Third: There is no disagreement, so far as I am aware, on such other important points as: (1) Freedom of all competent practitioners who subscribe to necessary rules of procedure to engage

in insurance practice; (2) freedom of all persons to choose their physician or dentist from among all practitioners in the community who engage in insurance practice; (3) freedom of insurance practitioners to accept or reject patients; (4) no interference by the insurance system with the private purchase of medical service by those persons who can afford it; (5) separation of cash benefits from medical benefits; and (6) professional control of professional personnel and procedures.

With this brief summary of the proposals of the staff it must be clear that, instead of being conceived in a spirit of hostility to the medical profession, they are designedly intended to be positively and affirmatively helpful to the medical profession. Some of you may say that, with your intimate knowledge of how medicine should be practiced, the proposals will not be helpful but harmful to the medical profession. This is not the time or place to discuss that. My point is that one of the purposes of the staff was to make proposals that would be of benefit to the doctors.

If health insurance comes as a result of state or federal legislation, embodying the principles as to which there appears to be a general accord, it would say, in effect, to the doctors: Keep the profitable part of your practice and convert at least part of your free work into services for which you will be paid; cultivate a group of new potential patients with which you would not otherwise come in contact; do not in any way alter your personal, financial, and professional relationships with your private patients; maintain those personal relations, as far as you can, among your insured patients (and you should be able to do this as well as if not better than is now being done in much of your hospital and clinic work) and be assured that in doing all these things you are at the same time promoting the health of a vast number of people who now receive inadequate medical care or no medical care at all.

Let me hasten to anticipate at this point a comment that must

be in the minds of some of you. You are saying: "Put that way it sounds all right but that is not the whole story." You are quite right. It is not the whole story. While I believe all that I have said is true, it ignores some dangers that will have to be studied, appraised, and guarded against. There must be an avoidance of the evils of bureaucracy. There must be a freedom from political influence. There must be no repetition of the defects disclosed in the administration of the workmen's compensation laws. The spirit of self-reliance and self-respect among the insured group must be maintained. Malingering must be strictly dealt with and minimized. The risks of racketeering and chiseling should not be overlooked. All these are possible dangers that can only be appraised when a plan in all of its administrative and financial details has been worked out and submitted for critical study and analysis. But you should not wait until a plan has been completely worked out. If you do, you may be making the same mistake which I am told by my medical friends was made by the profession in respect to the workmen's compensation laws; you will be permitting others than the members of your profession to lay down the rules of the game. You will recall that the compensation laws were at first cash-benefit systems to which medical care was later tacked on. It has been difficult, I understand, to eliminate this fundamental weakness of the laws and to improve their medical provisions.

The administrative and financial aspects of the plan are quite as important as are the underlying principles. At best mistakes will be made. Some unanticipated evils will creep in. Human nature will continue to be human nature. But the answer to all this is that the ultimate goal is worth some risks if they are not too serious. Furthermore, potential new evils must be weighed not against Utopia but against existing conditions. Your leaders have voiced the general dissatisfaction with the inadequacy of the present methods of paying for medical care and with the

quality of some of the medical care as given in free clinics. The advantages, both to those in need of medical care and to those who are equipped to meet that need, have seemed to me to outweigh the disadvantages *provided*—and this, I believe, goes to the very heart of the problem—provided the doctors themselves become wholeheartedly determined to make the plan a success.

Personally, I would have little faith in seeing achieved the full results hoped for without the cordial cooperation of the practicing physicians. Laws are not self-enforcing. To become effective they must have the support of public opinion—in this case medical opinion. Plans on paper are sterile unless vitalized by human energy. While it would be too much to expect unanimity in your profession I would hope that the predominating opinion may crystallize in favor of some plan for mutualizing the costs of medical care that would meet the needs of that vast group of our people who are neither well-to-do nor wholly destitute and who cannot, as individuals, budget their medical costs but who as members of a group can do so, and would also make provision on a more satisfactory basis than at present for the medical care of the indigent sick.

III

Next, let us put on the table the grievances directed against the Fund and with scalpel and forceps perform an exploratory operation.

If there is one complaint that stands out above all others, it is the charge of meddling by a lay group in an essentially medical problem. "No smug reformer is going to tell me how to practice medicine" has been voiced time and time again. This is a very human and natural reaction. Even the typical grandmother shows resentment at any proffer of aid as to the best way to remove the contents of an egg.

As a lawyer I would resent meddling by a lay group as to how the members of the Bar should practice law—despite the fact

there is ample room for improvement. But, on the other hand, if any group, lay or otherwise, should concern itself, not with reforming the practice of the law, but with ascertaining the facts as to the number of people who suffer injustice because they cannot afford to retain a lawyer and should further concern itself with proposals of putting justice within the reach of all whose rights are infringed, without disturbing the personal, professional, or financial relationship between a lawyer and his regular clients, I would consider such proposals with no feeling of resentment. On the contrary, I would look upon such proposals with a hopeful interest, particularly if they held out the prospect of creating a body of new clients and of compensating the members of the Bar for services for which otherwise they would receive nothing.

IV

In justice to the Fund may I ask the doctors to hesitate before classifying the Fund as a wholly "lay organization." It is true that its own technical staff includes relatively few practicing physicians. The reason for that is easily understandable. The Fund's historical approach to the subject of health has been from the angle of public health. It has never dealt with the technique of medical practice nor with curative medicine. Therefore, the senior personnel of the staff has been recruited from the ranks of those who have made a study of public health problems.

However, it should be noted that the staff does include three medical members, one of whom is a practicing physician and the other two have only recently given up their practice to do research and administrative work. In addition, among the staff's collaborators, there are three other physicians who are engaged in practice. Among the seven members of our Technical Board there are four graduate physicians, two of whom are in private practice. Our Advisory Council includes twenty-three physicians among its members and many of these are eminent private practitioners.

I mention these facts not to persuade you that we are primarily a medical organization, for we are not, but merely to indicate that our Fund is constantly subject to the influence of medical points of view and of a medical understanding of the problems with which we deal.

We intend to go still further in this direction. We are in the process of forming a medical committee, which will be associated with our Advisory Council and which I hope will include members of the profession who have made a study of medical economics, to collaborate with our staff in such further studies as may be appropriate after we know the results of the conferences now pending in Washington under the auspices of the President's Committee on Economic Security.

Such studies should be made available to all groups interested in the subject of health but should not be used by those associated with our Fund to influence the opinion of the general public.

I am constrained to mention one difficulty with which we are confronted in this connection and which we have encountered on other occasions. That is the difference of opinion we find among the doctors themselves as to who should be chosen as truly representative of medical opinion on a subject of this kind. In order to satisfy the varied viewpoints it would appear that this auxiliary committee should be made up of at least one hundred doctors! We will, however, try to get a committee of workable size that will be reasonably representative.

Now that I have ventured one mild rebuke to the medical profession, may I make amends by mentioning another? Is there not some truth in the statement that part of the hostility to foundations concerned with the public aspects of health is due to the failure of the medical profession to take an active part in the public health movement during its early stages? That movement has been developed to a large extent under the auspices of non-medical organizations and that, in turn, has produced an unfor-

fortunate "group consciousness" which militates against cooperation between the two groups. I said to one of our most outspoken critics the other day that the situation reminded me of the conflicts I used to see many years ago on the western prairies between the cattle men and the sheep men. In this less picturesque day six-shooters have not yet been resorted to but the underlying thought that there is an irreconcilable conflict of interest is present. It is against this fundamental concept of divergent interests that I would earnestly dissent. I would like to have a small part in dissipating it for all time.

Our Fund must look in the future to the medical profession for advice more than it has in the past. I urge your profession not to repeat, in this matter of the public aspects of medical costs, what many of your leaders have told me was a mistaken attitude on the part of the profession at the inception of the public health movement. I know you will not forget that some of the greatest names associated with your honorable profession are those who devoted themselves to the preventive and public health aspects of medicine—Jenner, Chadwick, and Shattuck; Pasteur, Koch, and Lister; Gorgas, Trudeau, and Welch—most of them physicians and some of them well known for their skill in curative medicine. These men rank with your great healers of human suffering. Your profession can ill spare either type. Its glory lies in the fact that you have both.

In this general connection there is one other point that should not be lost sight of and that is the value which a Fund like ours can be to the medical profession, if only a basis of helpful cooperation can be established. Such a Foundation can educate the public mind by making it more health conscious, and can also educate it to place ever-increasing reliance on the medical profession as the only safe and sound agency from which to secure competent service. I believe our Fund has already been of some use in this respect. The education of the public mind on just these

points was an important feature of the health demonstrations and was attended with some success. More work of this kind, and further efforts in directions that may be proposed by those of our medical advisers who are known to be "clinically minded" and which would also be helpful in promoting the health of the public, would furnish a basis for mutually helpful cooperation.

As the concept of public health has broadened it has gradually become synonymous with the health of the public, and in this relatively new aspect activities designed to promote the health of the public began to impinge upon the interests of those whose primary activity has been in the field of curative medicine.

I did not clearly understand this factor during the early process of its development. I have been vaguely aware that there must be some reason why our Fund, which was trying to keep people well, was finding itself in apparently growing discord with the doctors who were trying to make people well.

I can conceive of questions arising where the public good might conflict with the private interests of the practicing physician. Fortunately, in this matter of health insurance, there appears to me no such conflict when the true nature of the staff's proposals is understood.

Such a conflict was supposed to exist in the earlier stages of the health demonstration in Cattaraugus County. It was there that the first attacks on the Fund originated and it was from that source that these attacks spread to other parts of the country. But, before that demonstration came to an end, the earlier criticisms appeared to fade away and I am told that a better feeling was established. We had no comparable experiences in the other two demonstration areas—Syracuse and the Bellevue-Yorkville District in New York. On the contrary, so far as I am aware, we had the cordial cooperation of the doctors in those areas.

v

Speaking for myself, I may say that my own interest in so-called

health insurance was first aroused because of the promise it held not only to meet a public need but also to correct a grave injustice to one of the most useful, ill-paid, and imposed-upon professions in the country. Do I hear someone say: "He seems to be friendly enough but God save us from our friends?" Which brings us back to one of the purposes of my remarks this evening and that is, to make clear what the Fund's staff has proposed and, equally important, what it has not proposed.

The bogey of "State Medicine" or "Socialized Medicine," which arises in the minds of many physicians when health insurance is mentioned, is due, in part I believe, to a misunderstanding and misinterpretation of the proposals advanced by the Fund's staff.

Health insurance, as such, does not concern itself with the technique or method of medical practice. It does not make the doctor the employee of the State. It is merely a system of paying the costs of medical care for an in-between group numerically variously estimated at millions of people through a system of group budgeting and prepayment. It is intended to be not only consistent with the private practice of medicine, but is based upon the maintenance and strengthening of private practice. Indeed, so far as the doctor is concerned, health insurance is the very antithesis of "State Medicine" because it is a system of providing funds from which to remunerate the private practitioners.

Without attempting to reconcile, or to appraise the conflicting reports as to whether the British system is on the whole satisfactory to the public and to the medical profession in that country, but confining myself solely to the charge that any health insurance plan is, or would become, completely socialistic, I would ask you to read a statement in the *British Medical Journal* of last April to the effect that the medical profession in Great Britain regards compulsory contributory health insurance as its main bulwark against a really socialistic movement which provides medical care by means of a whole-time salaried service.

Personally, I would regard the expansion of the free clinics as fraught with much more danger to medical incomes, and to the quality of medical care, and as tending more toward State Medicine, than is involved in the type of health insurance that we are discussing. In fact, I would hope that much, if not all, of the free work now done in hospitals and clinics might be placed on a compensation basis under a well-conceived health insurance plan.

VI

There is another subject which has been frequently mentioned and which may be added to the list of complaints made against the Fund. That is the subject of propaganda. When I inquired into this matter I was told that the Fund had not been guilty of propaganda but that certain medical societies and certain medical journals had been flagrantly guilty in this respect.

My first impression was that the difference between education, which is held in high esteem, and propaganda, which is held in low esteem, might be expressed by defining education as a process of informing the public of one's own views on any given subject and by defining propaganda as a process by which your opponents inform the public as to their views on the same subject. But a little more thought convinced me that a less superficial, though still incomplete, distinction between education and propaganda would be to define education as a process of presenting the facts fairly and impartially with a strict regard for the truth irrespective of whether the truth helps or hurts the validity of one's conclusions, while propaganda is a process of presenting the facts in an intentionally biased and one-sided manner with scant regard for the truth. This disregard of the truth may be deliberate or it may be due to a lack of care in ascertaining what the truth is or to a willingness to give currency to unconfirmed rumors. In any case the effect is to mislead and confuse the public mind and to stir up unnecessary animosity.

In the last few months I have read, I believe, every article and

address made by the officers and staff of the Fund on the subject of health insurance. While it is unquestionably true that the authors have reached a point in their studies where they are clearly in favor of applying the insurance principle to the hazards of sickness for the dual purpose of promoting the health of the public and of improving the financial status of those who render medical care (and to this extent their writings may be regarded as propaganda), I can find no instance where there has been a departure from the strict truth or where there has been a misrepresentation of the views of those who hold opposing opinions.

May I express the hope that my remarks this evening will be treated by the journals of the various interested professional groups, to which alone this address has been released, in the same friendly spirit, however adversely critical, that I have endeavored to show in all that I have said?

VII

Another question which has been vigorously, and sometimes hotly, debated, is whether a health insurance system should be compulsory or voluntary. In considering the answer to this question bear in mind that in the proposals put forward by the staff there is no suggestion of compulsion on the doctor. The compulsion relates only to the insured person, and possibly to his employer, to set aside jointly, when earnings are not interrupted by sickness or by unemployment, a modest amount each year (little if any more than is ordinarily spent in haphazard fashion) with which to pay the costs of his medical care when sickness comes. In effect, it is a proposal to practice thrift collectively, and if so practiced the cost to many individuals is far less than if they attempted to do the same thing for themselves.

In point of fact, human nature being what it is, we all know that the majority of individuals would not voluntarily make any such provision against the rainy day of sickness and those who would be so disposed could not possibly make adequate provision

out of their small incomes for anything beyond relatively trivial illness. Hence, the reason for suggesting the insurance principle that has demonstrated its value in other fields as an economical and effective protection against the hazards which menace life and property.

In this general connection it has been urged that, instead of adopting a state-wide health insurance plan, with or without a federal subsidy for those states which conform to an approved standard, it would be better to let groups within a state experiment with a variety of plans according to local preferences and local conditions. Certainly no one can reasonably object to that procedure, for all such efforts are in the right direction. I understand that some of these plans are working very well. Some doubts have been expressed as to the stability of the financial support of some of these plans and a more serious doubt as to their capacity to reach more than the fringe of those for whose benefit the more comprehensive proposals are intended. However, pending the time when the preponderant opinion among the medical profession is in favor of dealing with the problem in a more fundamental manner, I hope that experiments of this kind will be continued and multiplied.

My attention has also been called to an interesting series of proposals worked out by a medical group and which involves modernizing and perfecting present state statutes which regulate the provision for medical care for the indigent through agencies of public assistance, and also for the establishment of a system of credit agencies through which solvent persons of limited resources can meet their cost of medical care to be repaid out of their income over a reasonable period, and which also contemplates a program to educate the people as to the importance of seeking medical care from qualified physicians instead of resorting to quackery and patent medicines.

Such proposals also contemplate continuous group instruction

of a technical and scientific character of the entire medical profession and an insurance system which will provide an assured income for hospitals and for those who cannot afford to meet the costs of major operations or of serious and prolonged illnesses.

The objectives of such a system are obviously desirable and, while the method and approach to their accomplishment are very different, some of them are compatible with the proposals of our staff.

Until plans embracing the administrative and financial features of each system are worked out it is, of course, impossible to make any intelligent comparison.

VIII

Despite the growing tendency of the State to engage in enterprises that heretofore have been reserved as fields for private initiative and individual development—or, to put it more accurately, *because* of that tendency—those of us who believe that the State exists for the benefit of the individual rather than that the individual exists for the benefit of the State are deeply concerned by the long range implications of this modern trend.

The doctors who oppose health insurance base their opposition, in part, on their fear and dislike of bureaucratic control and the injection of politics into anything so intimate and so individualistic as the practice of medicine. I share their misgivings, and, unless the plan as finally worked out can give reasonable assurances that these risks can be greatly minimized, if not wholly avoided, I would wish to proceed cautiously until it became quite clear that the advantages which appear on the face of the proposal would not be nullified by latent defects that might later develop in the administration of a plan based on such proposals.

But here again we are dealing with a factor that is not peculiar to the medical profession or to the problems which are facing it in this world of today.

The period is passing when business men were turning in

desperation to the Government to save them from the devastating effect of the depression and from the consequences of their own destructive competition. The problem of cleaning up the wreckage left in the wake of the depression still remains. Hence, this tremendous and pressing problem of relief which would have been immeasurably less serious if collective thrift plans had been in operation for, say, five years prior to 1929.

Already we are beginning to hear the familiar cry of business—big and little—"Balance the budget, reduce taxation, and take the Government out of business—particularly business in which the Government competes with private industry." To me it is a heartening cry for I have no hope for a Society made up of Government protégés.

But to my mind the best way, and in fact the only way, to take the Government out of business is for business and for gainful professions to take the incentive for providing reasonable social security away from the Government by seeing to it that the major part of the job is done by them and under their direction.

If, however, business and the gainful professions fail to provide such security, and by the same stroke afford a measure of security to capitalism, the Government will, I fear, continue to receive popular support for meeting these social needs, and the end of that road is out and out socialism.

IX

There is only one other matter of which I would speak briefly before concluding.

I would call to your attention a brief summary of certain activities of the Fund undertaken at the instance of members of the medical profession and carried out either under their direction or with their active and cordial participation.

The Fund has contributed over \$250,000 toward the research work in tuberculosis at the Saranac Laboratory of the Trudeau

Foundation and toward the endowment fund of that Laboratory. This work has been under the direction of Dr. Edward R. Baldwin, and many physicians specializing in tuberculosis have attended the Trudeau School and participated in these studies.

You are familiar with the work of the Diphtheria Prevention Commission in New York, which was conducted in cooperation with the five County Medical Societies of Greater New York, and which had the cordial support of the members of the medical profession throughout the City. There is ample evidence that the project not only achieved notable results but also was of material benefit to the physicians.

The Fund also contributed to the support of the National Board of Medical Examiners, with which you are familiar. As you know, this Board is made up entirely of physicians and Dr. Walter I. Bierring, President of the American Medical Association, and Dr. Merritte W. Ireland, of the Association's Council on Medical Education, are prominent members of its Executive Committee.

The Fund has derived much satisfaction from its investment in the studies in cervico-vaginitis in children, which were proposed by Dr. Walter M. Brunet, and which were carried on and continued under the direction of Doctors Van Ingen, Holden, and Hendee Smith. I am told that the report of this Committee is considered an outstanding contribution to one of the most baffling subjects with which the medical profession has to deal.

Time does not permit further references to matters of this kind but there are a number of others which have brought the Fund into helpful associations with such medical men as Doctors John R. Paul, Arthur B. Duel, William H. Park and others. It is worthy of note that in connection with these medically conducted and Fund financed enterprises, all of which were arranged by the members of the staff and later approved by the Board of Directors, the Fund has expended upwards of \$600,000 without making any allowance for the time of the staff or for other overhead expenses,

whereas, in this matter of health insurance, the outlay of the Fund, apart from the time and traveling expenses of the staff and the cost of the Fund's own publications, has been so negligible that it practically amounts to nothing.

Let me end your suspense as to whether I am bereft of terminal facilities by concluding with a few words on the subject of cooperation. It is one of the most overworked words in the English language. It connotes a lovely idea that is generally lost sight of when put to the test. Too often it means, "Cooperate with me on *my* terms"—the sort of cooperation that occurred when the tiger returned from the ride with the lady inside and the smile on the face of the tiger.

That is *not* the kind of cooperation which I offer to the medical profession on behalf of the Fund and of our staff. We do not wish to swallow anyone nor do we wish to be swallowed. The Fund and the various branches of the medical profession, the public health and social welfare workers, the hospital and nursing groups, and the voluntary agencies are all interested and have their place in this broad subject of health. The field is so vast and is capable of such enormous development that there is room and to spare for all of us. There is no need to step on each other's toes. There is every reason for us to go forward in orderly ranks and with irresistible power. No outside force—not even the Government—will seek to withstand our united strength if we are willing to do a good job. Our common cause will suffer only in so far as conflicts develop within our own ranks, or we fail to measure up to our responsibilities.

x

No one can deny that the subject of health is affected with a public interest. No one can deny it is a gainful occupation and, therefore, affected with a private interest. The doctor who contends that the whole field of health belongs exclusively to him is on untenable ground. The medical profession would not, I assume,

wish to be put in the position where it is the sole representative of the private and public aspects of such a vital subject. No one can be really comfortable when he tries to act as lawyer for several interested parties, judge and jury, simultaneously.

On the other hand, the health foundations, the public health leaders, the social workers, and the voluntary agencies who fail to guard the rightful private interests of the practicing physician are acting unwisely, are guilty of a grave injustice, and will retard their own efforts, for the reason, among others, that the family doctor, freed from financial worry and with greater opportunity to keep himself informed as to the progress in medical science, will not only continue to bring healing and comfort into the homes of his patients but will become a highly effective associate of the public health officer as well.

A recognition by the interested parties of these principles will furnish a sound basis for a cooperation that will be mutually helpful.

In this spirit I tender you our assistance and I ask for your help.

RECENT TRENDS IN MORTALITY IN THE UNITED STATES¹

by DOROTHY G. WIEHL

ALTHOUGH the death rate cannot be taken as an adequate criterion of the health of the population, the continued low level of mortality through the fifth year of the depression has been both surprising and encouraging. Undoubtedly we are justified in accepting it as a favorable sign that, in general, unemployment, lowered standards of living, and even privation have not produced a rising death rate. However, gross death rates for a population of 126 million may easily conceal unfavorable conditions affecting only certain elements in the population, and downward trends in the mortality for some groups may offset a rising mortality for other groups. The data are not available for any complete interpretation of the death rate during the past few years, but an analysis of the trends in the mortality from the principal causes of death and the extent to which the decline in deaths has affected different age groups gives us at least a clearer picture of what has been happening. Also, data from the large industrial insurance companies provide an index of mortality for the wage-earning class which is of considerable interest when compared with mortality in the general population. When the death rates for certain specific groups are considered, it becomes apparent that all have not shared equally in the improvement in mortality.

The gross death rate for each of the past five years has been lower than in any pre-depression year. From 1930 through 1933, the death rate in each year was slightly lower than in the preceding year, the rates being 11.3, 11.1, 10.9, and 10.7 per 1,000 popu-

¹Read before a joint session of the Sections on Economic and Social Sciences and on Medical Sciences of the American Association for the Advancement of Science at Pittsburgh, Pennsylvania, December 28, 1934. Data for 1934 have been brought up to date and minor changes have been made in the text.

lation. But in 1934, deaths increased and in eighty-six large cities the death rate was about 4 per cent higher than in 1933 and also higher than in 1932. This increase in deaths in 1934 was the result of mortality being on a generally higher level throughout the period from February through July than in the corresponding months of the previous year. Furthermore, the higher mortality is found to have affected sixty-nine of the eighty-six cities. Of the seventeen cities showing no increase, all but five are in New England, New York, or New Jersey, and most of these had shown an increase in 1933 over the 1932 rates.

For the first six months of 1934, which includes most of the period when the excess mortality occurred, preliminary data are available for twenty-four states, including about 80 million population.² These indicate that the important causes of death which showed large increases were pneumonia (18 per cent) and heart diseases (10 per cent), while cancer, diabetes, cerebral hemorrhage, and nephritis showed smaller increases. The infant death rate for twenty-six states was 5 per cent higher than for the corresponding period of 1933, and deaths from diarrhea and enteritis under two years of age also increased, although the summer months, when the disease is especially prevalent, are not included. Also mortality from both measles and whooping cough was higher than in any of the preceding three years. So great an increase in pneumonia deaths is unusual at a time when there was no widespread epidemic of respiratory conditions (influenza deaths were about 40 per cent fewer than in the preceding year).

The following comment on the increased mortality in the *Public Health Reports*² is of interest: "It is not possible to assign reasons for the increased death rates. Decreases in mortality have occurred for many years and the low record of 1933 may stand

²Mortality From Certain Causes During the First Half of 1934. *Public Health Reports*, United States Public Health Service, November 9, 1934.

for some time. Some of the increase in 1934 may be associated with increased industrial activity and its attendant exposure of workers to accidents and other hazards. On the other hand, the severe weather of the first half of 1934, occurring when many of the unemployed were ill-equipped with clothing and shelter to withstand the exposure, may have contributed to the high pneumonia and certain other death rates. Possible lowered resistance to disease in this element of the population may also have played its part."

But the death rate in 1934, though higher than in the previous two years, is still lower than that for any pre-depression year. These low death rates have led some to conclude that, rather than undermining health, the depression has had a beneficial effect on the health of the nation. This is probably true for some groups of people and the decline in some causes of deaths, such as industrial accidents, is a direct "benefit" of the depression. However, mortality rates for the population as a whole and from all causes conceal indications of less favorable mortality trends which affect only some groups in the population.

Thus, among insured persons in wage-earners' families, the mortality in the past five years has not decreased as for the general population, which suggests that conditions have been less favorable for this large group than for the population as a whole. Death rates reported by industrial insurance companies showed no decline in 1931 and 1932, the rates per 1,000 policies being 9.6 in each year; in 1933 the rate increased to 9.8 although the rate for the general population declined, and in 1934 the rate was again 9.8. These rates are for the families of wage-earners who could afford to continue payments on their insurance policies and, therefore, do not represent the families which have suffered most from the depression. In the two years 1932 and 1933, the number of policies in force in these industrial companies declined from 74 to 67 million, a decrease of about 7 million, or approximately

10 per cent. Obviously the people hardest hit financially were being gradually eliminated from the policy holders.³

The only data on mortality among families of the unemployed have been furnished by surveys of wage-earning populations in ten industrial localities which were made by the United States Public Health Service and the Milbank Memorial Fund early in 1933. A history of deaths for the four years 1929 to 1932 was obtained, and a comparison has been made of the death rates for two groups of families classified according to the 1932 employment status. Families with no employed worker or with only part-time workers reported a death rate for the two years 1931-1932 43 per cent higher than that reported by families with at least one full-time worker. Mortality for the two groups in 1929 and 1930 was approximately the same, but the death rate increased in 1931 and 1932 for the families without full-time workers and a decline occurred in families with a full-time wage-earner.⁴

CAUSES OF DEATH WHICH HAVE DECLINED

The downward trend of mortality during the depression years is the result of very striking decreases in deaths from a few causes. Deaths from tuberculosis and accidents, both of which are among the leading causes of death, have been reduced, and diphtheria, typhoid fever, diarrhea and enteritis, though not so important as causes of death, have shown proportionately larger decreases.

³A change in the age distribution of policy holders may have resulted from this great decline in policies in force, but it is unlikely that all the difference in the trend for this group and for the general population would be accounted for by an increase in the proportion of old people among those still insured.

⁴These are preliminary data on the mortality during four years among nearly 50,000 persons for whom illness rates during three months of 1933 have been published. Cf. Perrott, G. St. J., and Collins, Selwyn D.: *Sickness and the Depression. The Milbank Memorial Fund Quarterly*, October, 1933; January, 1934; July, 1934; Perrott, G. St. J., Collins, Selwyn D., and Sydenstricker, Edgar: *Sickness and the Economic Depression. Public Health Reports, United States Public Health Service*, October 13, 1933. Reprint 1598. Mortality data for a much larger population are being tabulated and will be made available later.

Changes in mortality over a short period can be much better understood if set against a background of trends over a longer time period. It is of interest to consider each of these causes briefly in relation to such a background.

Tuberculosis deaths have been declining for many years, and one might say that the campaign against this disease has been the cornerstone of the modern public health movement. From 1921 to 1927, the latest pre-depression year that was not affected by widespread respiratory epidemics, the tuberculosis mortality declined 20 per cent, and from 1927 to 1933, it declined 27 per cent. Studies have shown that tuberculous infection is less widespread now than even ten years ago. It is believed that facilities for diagnosis of the disease in its early stages and provision of sanatoria for care and isolation of cases of infectious tuberculosis have been effective preventive measures. These preventive measures have continued to function with little or no abatement throughout the depression period.

Deaths from accidental causes were on the increase throughout the decade 1920 to 1929 and reached a high point in 1929. From 1929 to 1932 they declined 12 per cent in the registration states of 1920, and in the same period accidental deaths among industrial policy holders of the Metropolitan Life Insurance Company declined 15 per cent. There was some decline in automobile accidents, but most of the decline was in other accidents, presumably these were chiefly industrial. There was a small increase in accidental deaths in 1933 and again in 1934. As industrial activity increases and improved economic conditions stimulate automobile travel, it seems very probable that accidental deaths will continue to rise.

The benefits of extensive immunization against diphtheria are vividly revealed in the decline in the death rate from this disease. Even though widespread use of immunization was started less than ten years ago, we now begin to foresee the virtual elimina-

tion of this disease. From 1927 to 1933 the death rate in the registration states of 1920 declined from 7.8 to 3.1 per 100,000, a drop of about 60 per cent. While diphtheria is a small part of the total death rate, this has meant a saving of the lives of about 5,000 children annually.

Deaths from diarrhea and enteritis among infants and young children have been declining since the beginning of the twentieth century, and from 1929 to 1933 the same general trend is shown. The continued decline in these and other infant deaths during the depression is convincing evidence that the efforts of public health and relief groups to protect infants against some of the effects of poverty have been successful. Preliminary data indicate that the decline in infant deaths was halted in 1934.

One small contribution to the decline in the total death rate has resulted from the marked drop in the birth rate. Although the death rate from maternal causes among women who bore a child has not decreased, the number of women dying from childbirth decreased 20 per cent from 1930 to 1933.

These improvements in mortality may be summed up briefly. Deaths from tuberculosis, diarrhea and enteritis, typhoid fever, and diphtheria, which accounted for about 7 per cent of all deaths, dropped 24 per cent from 1930 to 1933 compared with a decline of 13 per cent in the preceding three-year period. Deaths from accidents accounted for another 7 per cent of the total in 1930 and declined 12 per cent from 1929 to 1932. The improvement in the death rate from these causes was as great among the industrial policy holders of the Metropolitan Life Insurance Company as among the general population.

When the influence of these few causes of death on the general death rate is eliminated, we find that the death rate from all other causes for the population of the registration states of 1920 remains on a level during the depression years and is approximately the same as in 1923, 1924, 1925, and 1927, earlier years

which were also free of definite respiratory epidemics. But for the industrial policy holders of the Metropolitan Life Insurance Company the death rate from all other causes has increased during the past five years.

CAUSES OF DEATH WHICH HAVE INCREASED

The specific causes of death which have shown the principal increases in the years since 1930 are diabetes, cancer, and heart diseases. All of these diseases have caused an increasing number of deaths over a long period. Part of this increase has been due to our aging population, but the increase has exceeded an amount which could be accounted for in this way. A study⁵ of the rising mortality from these diseases made a few years ago showed that the death rates from heart diseases and cancer increased considerably between 1921 and 1927, at ages as young as 35 to 44, especially among males. For diabetes the increase began in the age group 55 to 64.

In the period from 1930 to 1933, the rate of increase in the mortality from diabetes and cancer was faster than in the preceding three-year period from 1927 to 1930 for the population of the registration states of 1920. Thus, the death rate from diabetes in 1933 was 15 per cent higher than in 1930, whereas the rate in 1930 was only 10 per cent higher than in 1927 and a similar increase of 10 per cent occurred between 1924 and 1927. The death rate from cancer in 1933 was about 7 per cent higher than in 1930 as against an increase of 4 per cent in the preceding three-year period, but the same as the increase from 1924 to 1927.

It is not apparent why the rate of increase in mortality from diabetes and cancer should be accelerated during these depression years. One possible explanation is that lack of early medical care has been a factor, since both are diseases which, if medical care

⁵Wiehl, Dorothy G.: Some Recent Changes in the Mortality Among Adults. *Journal of Preventive Medicine*, iv, No. 3, May, 1930.

is neglected or sought too late, may advance to the fatal stage quite rapidly.

Among the industrial policy holders of the Metropolitan Life Insurance Company, between 1930 and 1933, the percentage increase in the crude mortality rates from these causes was much greater than for the general population, although in the three-year period from 1927 to 1930 the rate of increase had been similar. For this insured wage-earning group, the diabetes death rate increased 30 per cent and the cancer rate 20 per cent, compared with 15 and 7 per cent respectively for the general population. Some of this difference is to be explained by a less favorable age distribution of the policy holders⁶ but the general indication seems to be that the increase in mortality from these diseases has been greater among the wage-earning group. The increase in both cancer and diabetes deaths was especially marked from 1930 to 1932, and rates adjusted for age for 1933 and 1934 show a slight decline in the mortality from both these diseases in 1934 among the insurance group.

Although mortality from heart diseases and other circulatory conditions increased 5.5 per cent from 1930 to 1933 in the registration states of 1920, this is a slightly lower rate of increase than was recorded from 1927 to 1930. Early indications are that the death rate from these diseases has risen again in 1934.

MORTALITY CHANGES FOR SPECIFIC SEX-AGE GROUPS

The diseases which have increased are important causes of mortality chiefly at the older ages, while those that have decreased are among the principal causes of death in middle life and in childhood. Therefore, it is not surprising to find that persons of different ages have shared very unequally in the improvement in mortality and that at some ages there has been no improvement.

⁶Data for mortality among industrial policy holders of the Metropolitan Life Insurance Company are from the *Statistical Bulletin*, Metropolitan Life Insurance Company, January, 1935.

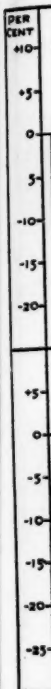
Before discussing in detail the change in mortality at specific ages, it will be helpful to review very briefly the trends in the mortality for specific sex-age groups which had been evident for the previous decade and to some extent for a much longer period. From 1921 to 1930, death rates for adult males in the age groups 25 to 34 and 35 to 44 had remained about on a level, and at older ages the rates had shown a steady increase. For women, on the other hand, death rates had declined in the age groups 25 to 34 and 35 to 44; and above 45 years of age, although the rates had shown an increase, the percentage increase was less than for males. As a result, the difference between the male death rate and the female rate in adult ages had been widening.

The percentage changes in the mortality rates for specific sex-age groups between 1930 and 1933 are shown in Figure 1 and are compared with the changes in the three-year period, 1927-1930. The total mortality for all ages combined declined a little over 5 per cent for both males and females in the depression period, and at specific ages a decline is shown for males up to age 55 and for females up to age 65. The rate of decline decreases, in general, with advancing age. Only for persons 75 years of age or over of either sex is the trend of mortality less favorable in the later period (1930-1933) than it was in the three years preceding 1930.

The most striking improvement in mortality, aside from the accelerated drop in childhood mortality, is the decrease in the death rates at ages 15-24 both for males and females, and the decrease among males at ages 25 to 34 and 35 to 44. It is in these age groups that mortality from tuberculosis and accidents is heaviest and the decline in these causes, as already noted, has contributed a major share of the decline in mortality.

The trend in the mortality for males at all ages except in childhood has been relatively more favorable than for females during the depression years when the changes which have occurred are considered in relation to the trends in previous years in the mortality

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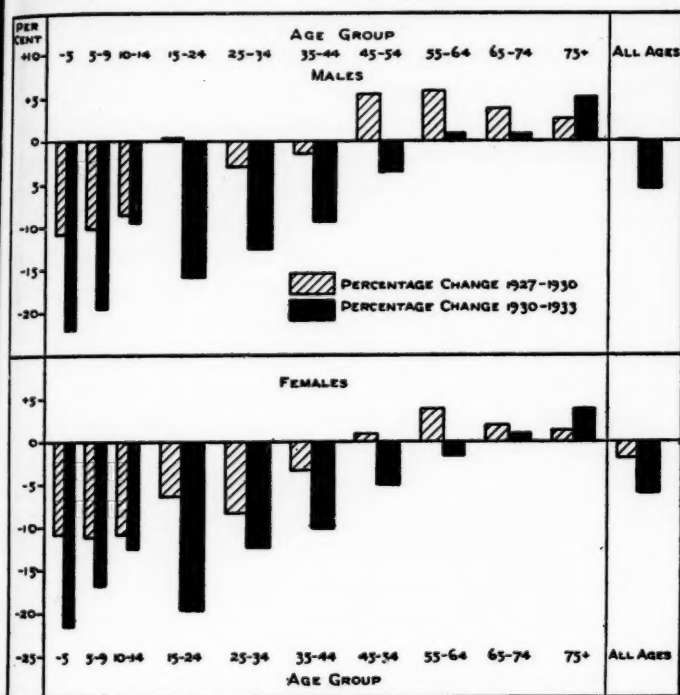


Fig. 1. The percentage change in the mortality for specific sex-age groups in the registration states from the period 1930 to 1933 compared with the percentage change from 1927 to 1930.

at specific ages. Thus, at ages 35 to 44 the decline for both males and females was about 10 per cent from 1930 to 1933, but in the preceding three-year period the decline for males had been less than one-half that for females.

SUMMARY

General mortality in the United States from 1930 to 1934 has been somewhat lower than in any pre-depression year but the 1934 death rates for eighty-six large cities was higher than in 1933 or 1932, though no widespread epidemic occurred. There

have been fewer accidental deaths, a natural corollary to the reduced industrial activity, and tuberculosis, diphtheria and other childhood diseases have continued the downward trend which had been in progress a number of years. Mortality for young and middle-aged adults, especially males, shows the greatest improvement since these ages benefit most by a reduction in accidents and tuberculosis deaths.

On the other hand, deaths from diseases of middle life and old age, especially diabetes, cancer, and heart diseases, have increased during the depression, and for cancer and diabetes the rate of increase has been greater than in the years immediately preceding. This has produced a rising death rate at older ages, which, however, has exceeded the expected increase only for the age group 75 and over.

Mortality for industrial policy holders has shown a less favorable trend than for the population as a whole. In a group of families of wage-earners in ten cities, a special survey showed that death rates were 43 per cent higher in 1931 and 1932 among those with no full-time worker than among those with a full-time worker.

COOPERATIVE CLINICAL STUDIES OF THE TREATMENT OF SYPHILIS IN THE UNITED STATES

by R. A. VONDERLEHR, M.D.¹

IN 1927 the Health Section of the League of Nations planned a study of the various problems which relate to the treatment of syphilis. Five American clinics² consented to cooperate in this investigation. Believing that their clinical material provided information on many points not emphasized by the study outlined by the Health Section and desiring to extend the investigation to various forms of late as well as early syphilis, they organized a cooperative clinical group whose function was to conduct a retrospective inquiry into the results of treatment in the several stages of syphilis. The cooperation of the United States Public Health Service with its coordinating and statistical facilities was enlisted. The cost of these studies was considerable and was borne, first, by a grant obtained from an anonymous donor, and later by the Milbank Memorial Fund. Within the past year the United States Public Health Service has assumed the entire burden of completing them. The support of such organizations has made it possible for the United States to conduct an independent evaluation of the treatment of syphilis in its representative clinics and, in addition, extend the desired cooperation to the League of Nations.

PLAN AND PURPOSE

The American study had as its aim the analysis, interpretation, and evaluation of pooled records from the five syphilis clinics. The intention was to utilize the results of this composite experience to simplify and standardize methods and practice in the

¹Passed Assistant Surgeon, United States Public Health Service.

²The American clinics selected were the Johns Hopkins University Clinic headed by Doctor Joseph Earle Moore; the Mayo Clinic by Doctor Paul A. O'Leary; the University of Michigan by Doctor Udo J. Wile; the University of Pennsylvania by Doctor John H. Stokes, and the Western Reserve University Clinic by Doctor H. N. Cole. The cooperation of the United States Public Health Service was sought in the administrative management of the studies and for its statistical facilities.

treatment of syphilis for the information of the specialist and the guidance of the doctor in general practice. Aside from the greater value resulting from the fusion of the records, it has been possible to reflect in these studies the opinion and experience of the participating clinicians.

The accumulated clinical material of these five clinics approximated 75,000 records of patients treated for syphilis. Uniformity of selection of cases has prevailed. The extent of this selection will be stated later in a brief description of the findings from the various studies. Several scientific papers based on these cases have been published. These relate to the treatment of early syphilis, the problem of mucosal and cutaneous relapse, the treatment of latent syphilis, the effects of syphilis in pregnancy, and the reactions of the human body to the arsenical compounds administered in the treatment of this devastating disease. Additional articles are in the process of preparation on the treatment of early syphilis, and plans for an analysis of the results of the treatment of syphilis of the cardiovascular and central nervous systems are under way. With the material now available every important aspect of syphilis can be covered except one—the prenatal. It is now proposed to collect records from the cooperating clinics pertaining to the treatment of prenatal syphilitic infection.

PRACTICAL VALUE OF THE STUDY

The great prevalence of syphilis and the large number of cases in any community make it economically impossible for health organizations with existing appropriations to give the consideration to the problem which is commensurate with its size. Under present medical organization in the United States it is the practicing physician who holds the most prominent position in the program for the ultimate eradication of syphilis. In view of this fact, the results of the studies made by the cooperative clinical group have been widely distributed among the members of the

medical profession. The findings, when applied, should go far in solving the syphilis problem.

The studies are not only of interest to the physician engaged in private practice, but they are also of inestimable value to the health officer because they place in his hands informative material for physicians regarding the most modern and authoritative procedures in syphilis therapy. Indeed, if all of the information uncovered were applied, the syphilis problem would soon be solved. Among the impediments in the way of the application of the findings the foremost one is the high cost of an intelligent program against syphilis. Without such a program the present penuriously financed measures will be largely ineffective. Another handicap is the indifference with which the average infected person regards the disease. Progress is further hindered, though to a limited degree, by the failure of many physicians to keep well informed on the subject and to adopt new methods, the apathetic and disinterested regard of the problem by most health officers, and the opprobrium and disrepute for people who contract syphilis, fortunately now somewhat decreasing but formerly strongly entrenched in the public mind.

The prevention of the spread of infection by treatment has been reemphasized in the cooperative clinical studies, and a standard plan of therapeutic procedure evolved which insures favorable results.

The primary purpose of this paper is to summarize and, as far as possible, to present in nontechnical language the most important findings which have resulted from the collective studies that have thus far been completed.

EARLY SYPHILIS

The studies in early syphilis give the most hopeful indication for the suppression of syphilis both as an individual and a community problem.

The need of a system for the application of antisyphilitic remedies, which will insure the best results and possibly ultimate cure, has long been felt. The cooperative clinical studies have demonstrated that the most satisfactory treatment of early syphilis must be *continuous*; it must employ an arsphenamine and bismuth, the latter intramuscularly; it must call for not less than twenty, and unless special resistiveness is encountered, hardly more than thirty injections of the arsphenamines; and, the system should call for continued treatment with heavy metal for one year after all symptoms and signs of the disease have disappeared. Blood tests should be taken at least at the beginning and end of each arsphenamine course, and the patient should be warned of the lack of significance of the negative report from the standpoint of the schedule.

The reappearance of weak positive blood reactions, after negative tests have appeared, should be taken as seriously as strong or fully relapsing positives. A spinal fluid examination with Wassermann, cell count, protein estimation, and colloidal gold test should be made before the end of the arsphenamine phase of treatment, or before the introduction of any rest period (none to be allowed until after the first year). It is understood that such a system can be carried through only when the patient is able to take these drugs without suffering a serious reaction, and this tolerance should be conserved in every possible way. The same system should be employed whether treatment is begun in the primary stage, without or with a positive blood test (seronegative or seropositive primary), or in the secondary stage.

An analysis was made of 3,244 cases of early syphilis under observation for a period of six months or more. It was found that eight out of every ten of these patients who had a relapse to a communicable form of the disease had received less than fifteen doses of arsphenamine with the accompanying heavy metal. Thirty-five per cent of such relapsed patients had received less

than five doses of arsphenamine. Additional factors demonstrated that the critical time for treatment of the syphilitic patient is in the first two years of the disease. During the first six months after treatment ceased, 45 per cent of the infectious relapses had occurred; by the end of the first year, 73.6 per cent; and by the end of the second year, 91 per cent.

Results of Treatment Depending on Stage of Disease at Beginning. Authorities have divergent opinions as to the time, during the early syphilitic infection, when treatment should be started. The development of a generalized immunity to the germ of syphilis in the secondary stage is well known. Some specialists believe that treatment should not be commenced until an opportunity has been given to the patient for the development of this immunity. In other words, when a patient presents himself in the primary stage, especially after a positive blood test has developed, the attending physician gives no immediate treatment but waits for the secondary stage.

A study of the stage of the disease at which the patient began treatment yet subsequently developed an infectious relapse presented a possible solution of this question. It was found that of the primary cases with negative blood reactions 16 per cent showed evidence of infectious relapses, 20 per cent of the primary cases with positive blood reactions, and 9.5 per cent of those patients who began their treatment in the secondary stage of syphilis. It is especially to be noted, however, that the patients who began treatment in the secondary stage of the disease had already passed through a communicable period in the chronology of the disease (the primary stage). During their primary stage 100 per cent of the cases had already been infectious. Thus for the greatest effectiveness in controlling the transmission of the disease it is obviously necessary to begin treatment in the primary stage, with negative or positive blood reactions. This more than outweighs the greater probability that the individual may relapse

if treatment begins early than would be the case if begun in the secondary stage.

The Relation Between Blood Reaction and Relapse. The significance of changes in the serologic reaction of the blood in syphilis has long been under investigation by both syphilologists and serologists. In the cooperative clinical studies, among cases which failed to give a negative blood Wassermann reaction after treatment, there was a higher percentage of relapses to the communicable form than among cases in which the Wassermann reaction changed from positive to negative. Under continuous treatment only 2.5 per cent of the patients whose serologic reactions became negative within the first year of the disease developed a mucocutaneous relapse. This compared with 6.7 per cent of those similarly treated whose reaction failed to reverse within the first year. A similar phenomenon was noted with each of the other types of treatment; intermittent, 8.2 per cent and 15.9 per cent; irregular, 12.8 per cent and 42.2 per cent.

It was established that the failure of serologic tests of the blood to reverse was more a matter of how treatment was given than of how much. The regular administration of arsphenamine and heavy metal, especially in the first three months of the disease, caused the greatest number of serologic reversals; even a little treatment given continuously was found to be more than twice as effective as when it was given intermittently.

Duration and Method of Treatment. The question next arises as to how long and in what manner treatment is to be given in order to obtain best results from the standpoint of the patient. For the prevention of the late and crippling manifestations of syphilis the advantage of adequate treatment, that is, more than twenty doses of arsphenamine, as compared with inadequate treatment, is evident. There were three times as many individuals who developed some type of central nervous system involvement among those who had received less than twenty doses of arsphenamine

mine with its accompanying heavy metal than among those receiving more than this amount. The effectiveness of adequate treatment in preventing the development of syphilis of the heart and blood vessels was not noted to the same extent (0.9 per cent adequately and 1.2 per cent inadequately treated). There appeared to be no indications that the development of a cardiovascular or central nervous system involvement depended on the stage of early syphilis at which the patient began treatment.

An effort was made to determine the probability of progression after the patient had remained under treatment for a two-year period or more. It was found that with a continuous scheme of treatment in which an arsphenamine with accompanying heavy metal was used, if the patient began treatment in the seronegative primary stage, 86.4 per cent satisfactory results⁸ were attained. But when the same scheme of treatment was used in the early secondary stage, the good results dropped slightly to 81.5 per cent. It is of interest to note that the most effective scheme of treatment in the seropositive primary stage was an intermittent scheme. This may have been due to the fact that these patients gained an immunity in the interim when no treatment was given. Such a hypothesis would coincide with the theory of the development of immunity when treatment is not given until the secondary stage has been reached. In any event, it is important to note that the occurrence of communicable manifestations of syphilis is obviated in the seropositive primary stage by the intermittent system.

From these data it would at first seem advantageous to the patient to delay treatment until he arrives at the early secondary stage. When all types of relapse are reviewed, however, it is found that, aside from the increased number of infectious relapses, there

⁸"Satisfactory result" implies that the patient has been followed for two years or more and that during one probationary year he has had no symptoms of syphilis, his blood has been consistently negative, he has had a negative physical examination and in almost all instances a negative spinal fluid examination, or without these negative findings he has had a reinfection.

is no evidence that the beginning of treatment at any time in the primary stage predisposes the patient to late and crippling manifestations of syphilis. With persistence in treatment any patient with primary syphilis may expect as satisfactory an outcome as is attained by those individuals who wait until the secondary manifestations of syphilis have developed. From a public health standpoint, the grave epidemiologic consequences of delayed treatment have already been discussed and are at once obvious. The cooperative clinical group recommend, therefore, that treatment of early syphilis be instituted as soon as possible, after the appearance of the chancre.

SYPHILIS IN PREGNANCY

The findings having the next greatest public health significance relate to those in which the disease coexists with pregnancy. They indicate that with early and adequate treatment during pregnancy the prognosis is most favorable for the birth of an infant apparently free from syphilis. Unfortunately, there are as yet no records available relative to the development of syphilis in the child subsequent to birth. When treatment of the syphilitic mother was adequate, that is, consisted of ten or more injections of one of the arsenical compounds and accompanying heavy metals, and the administration was begun before the fifth month of pregnancy, nine out of ten of all children delivered were apparently nonsyphilitic. But, when treatment was delayed until after the fifth month of pregnancy, only a little more than one-half of the children were born alive and nonsyphilitic although the maximum amount of treatment possible in the remaining gestation period had been given.

Effect of Treatment in Previous Pregnancies. Treatment even in a previous pregnancy seemed to influence favorably the outcome of subsequent pregnancies. Thus, if treatment had been given in previous pregnancies and not in the last, an apparently healthy child was delivered in the last pregnancy of almost two-

thirds of the women having a negative serologic blood reaction. But where treatment had never been received for syphilis and the blood reaction was negative, only a little more than one-fourth of the women were delivered of apparently nonsyphilitic children. The lesson to be learned is, therefore, perfectly clear and the cooperative clinical group conclude that the syphilitic mother should be given early and adequate treatment throughout every pregnancy whether her serologic test for syphilis gives a positive or negative reaction. One of the most encouraging findings in the study was that women, who had previously had two or three abortions and subsequently received antisyphilitic treatment of any kind, were able to bear living children three out of four times.

Tolerance of the Pregnant Woman to Treatment. Does the physiologic state of pregnancy render the human female more susceptible to the toxic properties of the antisyphilitic drugs? On the contrary, these studies demonstrated that the pregnant syphilitic woman was a good risk for arsenical therapy. She tolerated the arsenicals better than the nonpregnant woman. The findings gave evidence that crustaceous dermatitis and icterus, both serious complications to treatment, were more common in the syphilitic woman never pregnant. Such severe reactions as aplastic anemia, purpura hemorrhagica, and death due to treatment were not reported in the pregnant women undergoing treatment.

LATENT SYPHILIS

The fact that the average latent case of syphilis has passed the second year of the disease, and that syphilis in this stage does not ordinarily occur in a communicable form makes a consideration of latent syphilis of less significance for the health officer than for the doctor in private practice. The possible prevention of the transmission of syphilis by a latent syphilitic pregnant woman to her offspring offers the most important public health aspect of this stage of the disease. The infectiousness of the semen of the

latent syphilitic male appears to be relatively of less importance though at the present time the degree of such infectiousness is not certainly known. On the other hand, the studies under consideration offer some hopeful signs for the person with latent syphilis, and have resulted in the accumulation of information pertaining to the complex problem of treatment which should be of great value to the practicing physician.

The aim of treatment in latent syphilis is to decrease the probability of clinical progression or relapse in comparison with the results attained when no treatment is given, and to increase the probability of cure or arrest. In addition, treatment should be directed toward the control of the potential infectiousness of a latent syphilitic. Of those patients with latent syphilis treated for from two to five years, ultimate satisfactory results were attained in 46 per cent; from five to ten years in 60.6 per cent; and, of those patients who were followed for ten years or more, satisfactory results gained the prominence of 85 per cent with only 2.5 per cent of such patients experiencing a clinical relapse. In patients followed for ten or more years it was notable that serologic fastness of the blood to a large extent disappeared.

Types of Clinical Relapse in Latent Syphilis. An estimate by the attending physician as to the frequency with which the patient may develop the late and crippling manifestation of syphilis is a problem of first importance to both these individuals. Of the total group of 1,936 patients, there were ninety-four who experience some form of relapse—sixteen had an early infectious relapse, thirty-one syphilitic complications involving the heart and blood vessels, and thirty a central nervous system relapse. In five cases there was visceral involvement, usually of the liver. Of the ninety-four patients who had a clinical relapse, an ultimate satisfactory result was subsequently achieved in twenty of them. In only eight of the thirty relapsed cases with central nervous system involvement was enough damage done to cause distressing manifesta-

tions. In only seven of the thirty-one cases with a relapse involving the heart and blood vessels did the condition develop into an incapacitating one during the period covered. Clinical relapse was found to be only slightly more frequent in patients with persistently positive blood reactions than in patients whose reactions had become negative. The latent syphilitic patient, therefore, is in no special danger because of the persistence of a positive blood reaction. On the other hand, the occurrence of serologic relapse of the blood frequently was demonstrated to be an unfavorable omen. The repeated occurrence of one plus or two plus reactions interspersed with groups of negatives, when the tests were frequently performed, was proven to be an especially unfavorable sign pointing to ultimate complete relapse.

All except three of the patients who had an infectious relapse began treatment in early latency, that is, the disease was of less than four years' duration when the patient reported to the clinic. Three-fourths of the cases having a relapse of any kind received less than twenty doses of arsphenamine in combination with heavy metal. But again it was found that syphilis of the heart and blood vessels was not apparently affected by an increased amount of arsphenamine.

The cooperative clinical group have effectively shown that in latent syphilis the aim of treatment should be the prevention of the development of the late, crippling complications of syphilis. An outline of treatment has been suggested for the latent syphilitic, which consists of twenty-four doses of neoarsphenamine in courses of eight injections alternating with courses of bismuth totaling from fifty to sixty doses. Periods of rest from treatment should be limited to the late latency of syphilis, and in early latency a continuous scheme followed regardless of the serologic response. The subsequent period of observation should be continued during the remainder of the latent syphilitic person's life.

REACTIONS TO THE ARSENIC COMPOUNDS

The considerable number of records accumulated made it possible to study severe reactions to the arsenicals on a large and more comprehensive scale. Such reactions are of vital importance in the program for the eradication of syphilis. It is a well-known fact that these reactions and the pain associated with intravenous and intramuscular injections cause great aversion to antisyphilitic therapy in some of the less phlegmatic patients, and, indirectly, lapses from treatment. The study of the cooperative clinical group on arsenical reactions included a consideration of 177,360 injections. Among this number two severe reactions and thirteen mild reactions occurred per 1,000 injections. The severe reactions in their order of frequency were icterus, crustaceous dermatitis, ocular damage (found exclusively among 19,964 injections of tryparsamide), purpura hemorrhagica, and in a few instances arsenical stomatitis, aplastic anemia, hepatitis, and encephalitis.

Difference in Toxicity of Arsenic Compounds. Every scientist interested in the treatment of syphilis has long desired information relative to the toxicity of the antisyphilitic drugs when applied therapeutically. The many thousand injections given in the clinics of the cooperative group demonstrated that there was some difference in the toxicity of the several arsenic compounds. Arsphenamine ("606") and neoarsphenamine showed an equally low toxicity. Sulpharsphenamine was about 50 per cent more toxic than arsphenamine and neoarsphenamine. Although mild reactions after sulpharsphenamine were less frequent, the number of severe reactions from this drug indicated that it was the cause of much more serious damage than either arsphenamine or neoarsphenamine. Silverarsphenamine was less toxic than arsphenamine and neoarsphenamine but it was also less effective in producing satisfactory end results. Reactions of either a mild or severe type occurred with greatest frequency during the first

course of treatment. Severe reactions, especially crustaceous dermatitis and icterus, were more common among patients in the advanced age groups, while the mild reactions occurred more frequently in the early years of life.

Three-fourths of the patients in whom arsenical treatment was resumed after the first reaction experienced no further difficulty. The best measures found for the prevention of reactions were, in order of success, the postponement of arsenical treatment for at least one month and preferably for from three to six months, changing the variety of the arsenical, and finally lowering the dose.

PUBLIC HEALTH IN THE PROGRAM FOR ECONOMIC SECURITY

INCLUDED in the program of the Committee on Economic Security appointed by President Roosevelt, and in his recommendations in a message to the Congress on January 17th, 1935, are proposals for greatly increasing the scope and activities of the United States Public Health Service and for financial and technical assistance to State and local health departments. These are now pending in the so-called Wagner Economic Security Bill.

It is a significant fact that so far no important opposition to these proposals has developed in the Senate Finance Committee and in the House Ways and Means Committee to which the Bill was assigned. If the proposals are enacted into law, the country can be assured that the foundation of a national health program will have been greatly broadened. Sanitarians should feel greatly encouraged that for the first time in recent history of the country, the President of the United States has included more adequate provisions for the prevention of disease and the promotion of health as an essential part of a broad and comprehensive plan of economic security. In addition, the President proposed substantial increases in appropriations to the United States Children's Bureau for maternity and infant health.

From the report of the Committee on Economic Security to the President on January 15th, 1935, the following excerpts are made:

"In this situation there is great need for a nation-wide program for the extension of preventive public-health services. As was well stated by the medical advisory board:

"'At the present time appropriations for public-health work are insufficient in many communities, whereas a fuller application of modern preventive medicine, made possible by larger public appropriations, would not only relieve such suffering but would also prove an actual financial economy. Federal funds, expended through the several States, in asso-

ciation with their own State and local public-health expenditures, are, in our opinion, necessary to accomplish these purposes and we recommend that substantial grants be made.'

"In accord with these principles and following the specific suggestions of the Advisory Committee on Public Health, we recommend: (1) Grants-in-aid to local areas unable to finance public-health programs with State and local resources, to be allocated through State departments of health; (2) direct aid to States in the development of State health services and the training of personnel for State and local health work; (3) additional personnel within the United States Public Health Service for the investigation of disease and sanitary problems which are of interstate or national interest and the detailing of personnel to other Federal bureaus and to States and localities. The Advisory Committee on Public Health suggested that in order to carry out these policies the total appropriation to the Public Health Service be increased by \$10,000,000 per year, in contrast with \$5,000,000—4 cents per capita—now spent by the Federal Government in all its departments for human health services. The advisory committee also reported that the needs of the country are considerably in excess of the additional expenditures suggested but expressed the view that a larger amount cannot be efficiently spent until necessary additional personnel has been trained and further tests of practical procedures have been made through which certain diseases can be more effectively controlled. It is not within our province to say whether the precise amount suggested should be appropriated, but we strongly endorse the recommendation for increased Federal participation in the prevention of ill health.

"It has long been recognized that the Federal, State, and local Governments all have responsibilities for the protection of all of the population against disease. The Federal Government has recognized its responsibility in this respect in the public-health activities of several of its departments. There also are well-established precedents for Federal aid

for State health administration and for local public facilities, and for the loan of technical personnel to States and localities. What we recommend involves no departure from previous practices, but an extension of policies that have long been followed and are of proven worth. What is contemplated is a nation-wide public-health program, financially and technically aided by the Federal Government, but supported and administered by the State and local health departments."

The Committee's report also included the following recommendation for further Federal aid to the Children's Bureau to be used for its own activities and for grants-in-aid to States:

"We recommend that the Federal Government through the agency of the Children's Bureau should again assume leadership in a nation-wide child and maternal health program. Such a program should provide for an extension of maternal and child health services, especially in rural areas. It should include (a) education of parents and professional groups in maternal and child care; supervision of the health of expectant mothers, infants, pre-school and school children, and children leaving school for work; (b) provision for transportation, hospitalization, and convalescent care of crippled children in areas of less than 100,000 population. This program should be developed in the States under the leadership of the State departments of health in cooperation with medical and public-welfare agencies and groups concerned with these problems. Federal participation is vital to its success. It should take the form of both grants-in-aid, and of consultative, educational, and promotional work by the Children's Bureau in cooperation with the State health departments.

"The appropriation suggested by our Advisory Committee on Security for Children of \$7,000,000 per year is large in proportion to the \$41,139 now appropriated to the Children's Bureau for child and maternal health work. But its cost is small when it is compared with the expenditures for many purposes having far less direct relation to human wel-

fare. Whether the precise amount suggested should be appropriated is a matter for the determination of other agencies. But we cannot too strongly recommend that the Federal Government again recognize its obligation to participate in a nation-wide program saving the children from the forces of attrition and decay which the depression turned upon them above all others."

These proposals grew out of a study of the "risks to economic security arising out of ill health" which was authorized by the President's Committee on Economic Security. This Committee¹ was appointed last June to make recommendations to the President on safeguards—to quote President Roosevelt's words—"against misfortunes which cannot be wholly eliminated in this man-made world of ours." The risks arising from ill health were the subject assigned to a special staff headed by Edgar Sydenstricker and I. S. Falk whose services were loaned by the Milbank Memorial Fund at the request of Edwin E. Witte, executive director and secretary of the President's Committee. On the subject of the extension of public health services they were assisted by Dr. W. Frank Walker and Professor Ira V. Hiscock. This staff worked in close collaboration with representatives of the United States Public Health Service and the Children's Bureau. The proposals which they suggested as a result of their study were submitted to the Public Health Advisory Committee appointed by Secretary Perkins composed of the following: Eugene L. Bishop, M.D., president, American Public Health Association; A. J. Chesley, M.D., secretary and executive officer, Minnesota State Board of Health; Louis I. Dublin, M. D., third vice-president and statistician, Metropolitan Life Insurance Company; Homer Folks, secretary, State Charities Aid Association; Allen W. Freeman, M.D., dean, School of Hygiene and Public Health, The Johns

¹Composed of: Frances Perkins, Secretary of Labor, chairman; Henry Morgenthau, Jr., Secretary of the Treasury; Homer S. Cummings, Attorney General; Henry A. Wallace, Secretary of Agriculture, and Harry L. Hopkins, Federal Emergency Relief Administrator.

Hopkins University; Clarence Hincks, M.D., general director, The National Committee for Mental Hygiene; Thomas Parran, Jr., M.D., New York State Commissioner of Health; Milton J. Rosenau, M.D., professor preventive medicine and hygiene, Harvard Medical School; John J. Sippy, M.D., health officer, San Joaquin Health District, Stockton, California; Katharine Tucker, R. N., general director, National Organization for Public Health Nursing; C.-E. A. Winslow, D.P.H., professor of public health, Yale School of Medicine; Abel Wolman, chief, Bureau of Sanitary Engineering, Baltimore, Maryland; Felix J. Underwood, M.D., State Board of Health, Jackson, Mississippi. This group met in Washington on November 22, 1934, and the staff report, after having been approved with some revisions, was presented to the Committee on Economic Security on December 15, 1934.

In addition to measures for preventing risks to economic security arising out of ill health, Mr. Sydenstricker's staff took into consideration various proposals for federal aid for providing and stimulating public (tax-supported) medical services and facilities. Among such proposals considered were more extensive medical care among persons for whom the federal government has assumed some responsibility; the building of additional institutions or additions to existing institutions for the care of the mentally diseased, and of tuberculosis sanatoria in areas where these facilities are inadequate; the building and maintenance of rural hospitals and health and medical centers; provision of clinics for syphilis; provision of dental services either as a part of medical services paid through insurance against the costs of medical care, or as public dental services for certain fractions of the population; and the payment of physicians now serving without pay in clinics. Insurance against loss of wages resulting from illness and insurance against the costs of medical care were among the most important subjects studied by Mr. Sydenstricker's staff. In these studies of medical services and of insurance, Mr. Sydenstricker

was aided chiefly by Dr. Falk. He had the assistance also of Michael M. Davis, Ph.D., Nathan Sinai, Dr. P.H., and, on the technical phases of health insurance, he invited and had the technical assistance of Robert G. Leland, M.D., and A. M. Simons, Ph.D., of the staff of the Bureau of Medical Economics of the American Medical Association. Upon Mr. Sydenstricker's recommendation, Secretary Perkins formed a Medical Advisory Board as well as advisory committees on dentistry, hospital management, and nursing. The various proposals which were made to the Committee on Economic Security have been discussed at considerable length in one or more meetings of these advisory boards and committees. The staff report on the entire subject of "Risks to Economic Security Arising Out of Ill Health," which was prepared by Mr. Sydenstricker and Dr. Falk, was presented to the Committee on Economic Security prior to March 1, 1935.

THE AGE INCIDENCE OF TUBERCULOSIS AND ITS SIGNIFICANCE FOR THE ADMINISTRATOR¹

by JEAN DOWNES

THE high incidence of active cases of tuberculosis among young adults calls for a new emphasis in tuberculosis administration. The preventive aspect of the tuberculosis program has been directed mainly toward case-finding among children and adolescents and close supervision of individuals at those ages in tuberculous families. Data are accumulating which indicate that a more direct attack against the disease should be made through case-finding and supervision among adults.

Through special studies of tuberculosis in Cattaraugus County, considerable original data have been collected over a period of years for the purpose of shaping the administrative program toward greater effectiveness in the control of the disease. Information was secured through investigation of tuberculous families which makes it possible to present for the first time the actual age incidence of manifest disease among family contacts with a comparison of the age incidence for the community as a whole. Some of the evidence indicating the relatively great importance of supervision among specific sex-age groups of the population is reviewed in this paper.

AGE INCIDENCE AMONG FAMILY CONTACTS

It is important for the tuberculosis administrator to know the ages at which the breakdown from tuberculosis occurs most frequently so that these ages may be emphasized both in case-finding and supervision. It is recognized that precise data on tuberculosis according to age at onset of the disease are difficult to ascertain

¹From the Milbank Memorial Fund.

Acknowledgments are made to the Cattaraugus County Department of Health, especially to Dr. John H. Korn, director of the Bureau of Tuberculosis, whose interest and cooperation have made the study possible and to Miss Mae P. Duffy who was responsible for the collection of the major part of the information from the tuberculous families.

for any area because the disease may evidence itself as an acute illness with a sudden onset or a chronic illness with an insidious onset extending over a considerable period of time before it becomes characteristic of tuberculosis. Delayed diagnosis and faulty reporting are also factors which tend to conceal actual age incidence. However, it is generally conceded that tuberculosis is a disease which spreads among family contacts and it is believed that most cases in the community are the result of family or household contact with an infectious case. Consequently a group of tuberculous families in which the initial case is one of adult pulmonary tuberculosis may be used as a sample population in which to observe the frequency and age of occurrence of secondary cases with clinical symptoms.

Special investigation and study of tuberculous families in Cataaugus County make it possible to observe the occurrence of secondary cases in a sample of eighty-five families. The initial or first case in each family was adult pulmonary tuberculosis. The initial case was known to have had a positive sputum in 70 per cent of the families; in 17 per cent no record of a sputum test was available but it was believed that sputum had been positive; in 9 per cent the sputum tested was negative and in 4 per cent the initial case reported no sputum available for a test. In 65 per cent of the families the initial case was the husband or wife, in 20 per cent the first case was a daughter, in 13 per cent, a son, and 2 per cent some other relative in the home.

The age and sex incidence of secondary cases with clinical symptoms in these eighty-five families is shown in Figure 1 and Table 1. The method of determining the age at onset of the disease and of arriving at age incidence of tuberculosis, or case rate per year of observation, in a population composed of families is described in detail in the footnote below.² The incidence of sec-

²The eighty-five families were selected at random from the active cases of tuberculosis reported during the period 1923-1930. The only requisite of selection was

(Continued on page 154)

ondary cases of tuberculosis at ages 0-4 is 5.0 per 100 person years for males, the highest found in any age group; for females it is 2.5 or slightly lower than at certain adult ages. At ages 5-9 the

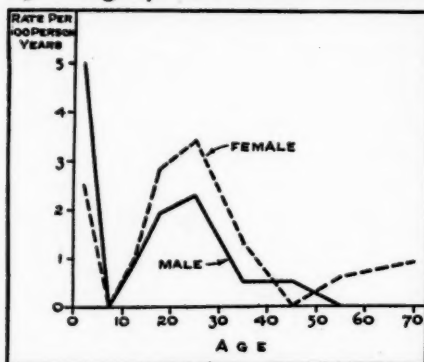


Fig. 1. Age incidence of secondary cases of tuberculosis (all forms) with clinical symptoms among male and female contacts in eighty-five tuberculous families in Cattaraugus County.

that there must have been an active case within each family sometime during the period 1923-1930 with an unquestionable diagnosis of active tuberculosis. The active case which formed the basis of selection in each family was not necessarily the initial case in the family. Detailed information as to the onset of first symptoms was secured for all cases in each family through visits to the home and interviews with patients in the sanatorium by an investigator, especially trained for this type of work. Symptoms which were asked about are as follows: fatigue or worn-out feeling, unusual loss of weight, pleurisy, chest cold of unusual duration, and blood spitting. Date and duration of time was secured for each symptom if it had been present. For pleurisy, information was sought as to the number of attacks, approximate date of each attack, whether or not there was effusion, whether or not the attack of pleurisy was disabling, length of time in bed and whether or not a doctor was in attendance. A chest cold of unusual duration was one which lasted four weeks or longer. The symptom history was considered in its entirety in determining the time of actual onset of disease for each patient, that is, neither the first symptom to appear nor no one symptom alone such as loss of weight was taken as absolutely indicative of onset.

Since it was desired to arrive at an incidence of secondary cases of disease in a population based on families into which the factor of exposure to an infectious disease had been introduced, it is necessary to use the total person years at each age as a population base after exposure to tuberculosis is known to have occurred. Thus it is possible to compute the rate of occurrence of tuberculosis with clinical symptoms at each age in a population with familial exposure to tuberculosis. This is an adaptation of the life table method with the distinction that it represents years of life after the factor of exposure to familial tuberculosis has been introduced. For example, the person years at ages 10-14 include individuals for whom exposure to tuberculosis started at ages 10-14 plus those individuals for whom exposure started at 0-4 or 5-9 who had reached ages 10-14. This same procedure applies to each age group. Person years were counted from the beginning of exposure to familial tuberculosis to July 1, 1934.

rate is zero for both sexes, then rises to .9 for males and 1.0 for females at 10-14 years of age. The frequency of cases in the next age period, 15-19, increases very rapidly and reaches a second peak at 20-29 for both sexes but the incidence is much higher for females than males. After age 30 the rates show a very rapid decline and con-

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AGE GROUPS	RATE PER 100 PERSON YEARS		NUMBER OF SECONDARY CASES OF TUBERCULOSIS WITH CLINICAL SYMPTOMS		NUMBER OF PERSON YEARS OBSERVED AT EACH AGE	
	Male	Female	Male	Female	Male	Female
0-4	5.0	2.5	4	2	80	80
5-9	0	0	0	0	182	194
10-14	0.9	1.0	2	2	212	204
15-19	1.9	2.8	4	6	206	215
20-29	2.3	3.4	7	10	303	291
30-39	0.5	1.3	1	2	192	155
40-49	0.5	0	1	0	187	179
50-59	0	0.6	0	1	152	162
60+	0	0.9	0	1	151	106

¹The initial or first case in each of the eighty-five families was one of adult pulmonary tuberculosis.

Table 1. Age incidence of secondary cases of tuberculosis with clinical symptoms by sex in eighty-five tuberculous families, Cattaraugus County.¹

tinue below a rate of 1.0 per 100 person years after age 40. These data are shown for age at onset of disease determined by a history as to appearance of symptoms. When tabulated according to actual breakdown from tuberculosis, there is practically no change in the shape of the curve. The high incidence of tuberculosis among infants and children of preschool age in tuberculous families is a well-known fact. The tendency for children who have had intimate exposure to tuberculosis to develop the disease at the teen ages is also generally recognized. But since active tuberculosis with clinical symptoms occurs even more frequently in early adult life than in the teens, it would seem a wise procedure in tuberculosis administration to place considerably more emphasis than is customary at the present time upon case-finding among young adults and close supervision of family contacts between 20 and 30 years of age.

AGE INCIDENCE FOR CATTARAUGUS COUNTY

It is of interest to know whether or not the age incidence of cases of tuberculosis with clinical symptoms for the community as a whole is similar to the incidence in tuberculous families. The collection of data of cases in Cattaraugus County over a period

of eleven years (1923-1933) makes it possible to show the average annual incidence of active tuberculosis at different ages for that area.³ These data are shown in Figure 2. The age incidence for

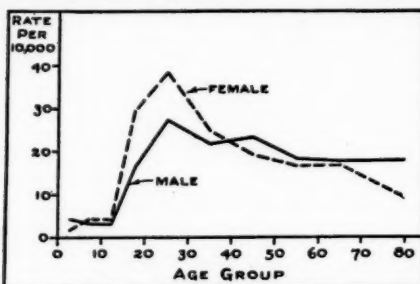


Fig. 2. Average annual incidence of active cases of tuberculosis (all forms) by age groups and sex, Cattaraugus County, 1923-1933. The rates shown in this chart are based upon all active cases reported or diagnosed in the eleven-year period, or a total of 671 cases. Cases among Indians and Buffalo residents at J. N. Adam Memorial Hospital, Perrysburg, are excluded.

less rapidly after age 30 than was found to be true in the tuberculous families. Since the age curve for these tuberculous families does not include the initial cases among which are those resulting from extra-familial contact, this difference would suggest that extra-familial contact plays a rather important part in the production of cases at older adult ages. The significant fact brought out by this chart again is the high frequency of occurrence of cases in the early adult ages which are not being particularly emphasized for case-finding or supervision. These ages must be considered as highly important in tuberculosis control if the present decline in mortality from the disease is to be greatly accelerated.

³A program of intensive case-finding and of education of the public to seek early diagnosis has been carried on in Cattaraugus County throughout the period 1923-1933. It is believed that most individuals in the County who are ill with tuberculosis are known to the Department of Health. Through a special study of the prevalence of tuberculosis in a rural section of the County, it was concluded that 73 per cent of the active cases among the rural population are known and this is considered as an indication of a high degree of attainment in case-finding and reporting in the County as a whole.

the County as a whole and that for the tuberculous families when compared show certain important similarities. Excluding the occurrence of tuberculosis among children under 10 years of age, both curves indicate a rapid increase in tuberculosis at the teen ages and reach a high point at ages 20-29. The incidence for the total County falls much

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The sex differences in the incidence of active tuberculosis in the County during this period as shown in Figure 2 also follow closely those noted for members of tuberculous families. From ages 5-29 the case rate is higher among females than among males, the excess being greatest at ages 15-19 where it is 81 per cent. At ages 40-49 the rate among females falls to 83 per cent of the male rate and continues to be slightly lower at the older ages.

In view of the fact that the mortality data do not show a comparable excess among females except at ages 15-19,⁴ the question may be asked whether active tuberculosis actually occurs more frequently among females than among males at young adult ages as Figure 2 indicates, or has case-finding and reporting operated more effectively among females than among males.

In the first place we may refer to the evidence obtained from the secondary case rates in the tuberculous families. Among this group of carefully observed individuals the female incidence at ages 20-29 exceeded the male in the same amount as noted for the total County incidence; at ages 15-19 the excess in the tuberculous families was about 50 per cent compared with 80 in the County. Secondly, the proportion of family contacts examined has not differed for the two sexes. Since the stage of the disease at diagnosis is an indication of successful case-finding, sex differences by stage may be considered. Classification of adult pulmonary cases shows that at ages 15-29 approximately 6 per cent more females than males was diagnosed as minimal. However, if the minimal cases are excluded from the rates for both sexes, we have at ages 15-19 a rate of 11.3 among females compared with 6.8 among males; at ages 20-29, a rate of 14.5 compared with 10.8 per 10,000 males. The difference between these rates among males and females, namely, at ages 15-19, 4.5 ± 1.562 , and at 20-29, 3.7 ± 1.416 , when tested statistically may be considered as

⁴The average annual mortality from tuberculosis by age and sex is discussed on page 158.

significant.⁸ No significant differences were found at any other age. It seems reasonable to conclude that tuberculosis does occur more frequently among females than among males at those ages.

MORTALITY AT SPECIFIC AGES

As already suggested, the specific sex-age differences in mortality from which most of our information concerning incidence of tuberculosis has been drawn do not agree closely with the case

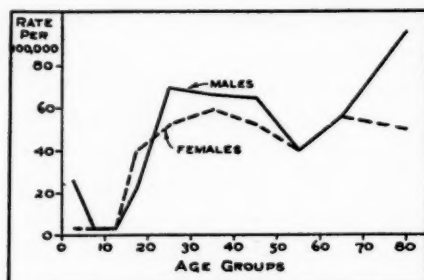


Fig. 3. Average annual mortality from tuberculosis in Cattaraugus County by age groups and sex, 1925-1933. (Excluding Indians and nonresidents dying at the J. N. Adam Memorial Hospital, Perrysburg.)

early childhood, 0-4 years, both case incidence and mortality are much lower for females than males; from ages 5-14 mortality for the two sexes is nearly equal but case incidence is 30 to 40 per cent higher among females. During the adolescent years, ages 15-19, the female rates for both mortality and case incidence exceed the male rates by about 80 per cent. At ages 20-40 a striking reversal occurs and the mortality rates for females are lower

⁸The difference in the average annual rates for males and females at ages 15-19 is three times its probable error, as shown in the table. The difference in the rates at ages 20-29 is almost three times its probable error. Consequently the differences at these ages may be considered as probably

Age Group	Average Annual Rate Per 10,000		
	Male	Female	Differences
15-19	6.8±.95	11.3±1.2	4.5±1.6
20-29	10.8±.92	14.5±1.1	3.7±1.4

significant and not due entirely to chance variations.

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than for males although the incidence continues to be higher. Above 40 years of age the sex ratio for mortality and incidence is similar with the female rates slightly below the male rates.

Obviously the higher mortality for males at ages 20-39, although the incidence of active cases is higher for females, must mean that more of the diagnosed cases among males were fatal. One factor influencing the higher fatality is the relatively unfavorable stage at which the male cases were diagnosed. Thus Table 2 shows that a higher proportion of minimal cases were diag-

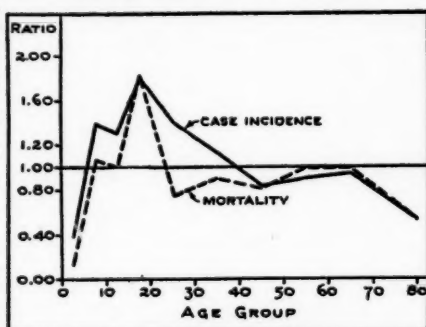


Fig. 4. Ratio of the tuberculosis death rate and the active case incidence among females to males at different ages. When the ratio is 1.0 to 1.0 the male and female rates are equal; if less than 1.0 the female rate is lower than the male; if more than 1.0 the female rate is higher than the male. Based on Figures 2 and 3.

nosed among females than males at ages 15-29; at ages 30-49 almost 50 per cent of the male cases were classed as advanced compared with 30 per cent among females. Practically no differences as to stage were noted for either sex after age 50. When the fatality by sex for cases diagnosed in the same stage is compared, a very interesting result is shown. Those diagnosed as moderately advanced at ages 15-19 had an average annual fatality of 12.6 per 100 years of observation among females and 6.0 among males; at ages 20-29 the fatality was strikingly different with a rate of 15.3 among males and 7.6 for females; very little difference was noted in the average annual fatality among males (7.7) and females (8.8) diagnosed at ages 30-39. These differences in fatality are suggestive but are found not to be significant when judged by their probable errors. This means that they are no greater than

STAGE	AGE GROUPS					
	15-29		30-49		50+	
	Male	Female	Male	Female	Male	Female
PER CENT						
TOTAL	100.0	100.0	100.1	100.0	100.0	100.1
Minimal	21.3	26.8	19.4	30.2	9.4	12.8
Moderately advanced	44.7	42.8	32.7	39.6	37.5	36.1
Advanced	34.0	30.4	48.0	30.2	53.1	51.1
NUMBER						
TOTAL	94	138	98	96	64	47
Minimal	20	37	19	29	6	6
Moderately advanced	42	59	32	38	24	17
Advanced	32	42	47	29	34	24

Table 2. Active cases of pulmonary tuberculosis according to stage of disease and age when diagnosed, Cattaraugus County, 1923-1933.

might have occurred as chance variations due to the small numbers involved.⁶ Therefore no general significance can be attached to this difference in fatality found in Cattaraugus County until more data have been accumulated.

SUMMARY

The findings of this study of tuberculosis cases in Cattaraugus County may be summarized briefly. Among contacts in tuberculous families active cases of tuberculosis with clinical symptoms, both male and female, occurred even more frequently in early adult life, ages 20-29, than at the teen ages. The incidence of

⁶The average annual fatality among active cases diagnosed as minimal and those diagnosed as advanced showed no sex differences. The differences noted among cases diagnosed as moderately advanced are shown in the table:

AGE GROUP	AVERAGE ANNUAL FATALITY PER 100 YEARS OF OBSERVATION		
	Male	Female	Difference
15-19	6.0±2.8	12.6±2.6	6.6±3.8
20-29	15.3±3.8	7.6±2.2	7.7±4.4
30-39	7.7	8.8	1.1

active cases for the total County was highest also at ages 20-29 for both sexes. This is evidence that more emphasis should be placed upon the supervision of contacts between the ages of 20 and 30 in tuberculous families and case-finding among young adults should be stressed. There is evidence also that active tuberculosis occurs more frequently among females than males in early adult life. However the higher mortality among males at those ages and the relatively unfavorable stage at which the male cases were diagnosed indicates that a special effort should be made to secure earlier diagnosis among males.

The isolation of positive sputum cases, the supervision of child contacts in tuberculous families, the protection against infection through tuberculin testing of cattle and pasteurization of milk, all have, no doubt, contributed to the declining death rate from tuberculosis. But if the decline in the death rate is to be greatly accelerated, due consideration must be given to the points cited above.

EFFECTIVENESS OF BIRTH CONTROL

A SECOND STUDY OF CONTRACEPTIVE PRACTICE IN A SELECTED GROUP
OF NEW YORK WOMEN¹

by REGINE K. STIX, M.D. AND FRANK W. NOTESTEIN

IN January, 1934, we published the first report on the Milbank Memorial Fund's investigation into the contraceptive practices of a group of women who attended a birth control clinic.² In that report we considered only the experience of these patients before their first visit to the clinic, and centered attention on the comparison of pregnancy rates for the time during which they used no contraceptive with those occurring when contraceptives were used.

The present report, like the first, is limited to the consideration of the period before the first clinic contact and therefore to a study of the effectiveness of untutored contraceptive practice. It differs from the first report in presenting for a sample of 991 instead of 714 women a more detailed analysis of their pre-clinic experience, which makes it possible to study their fundamental ability to conceive, as well as to determine when and how they used contraceptives. It also makes it possible to compare the relative effectiveness of different contraceptives, and of the same contraceptive as used by people with different religious affiliations.

THE GROUP STUDIED

It must be emphasized that we are not dealing with a random sample of the population, but with a highly selected group. All of

¹From the Milbank Memorial Fund.

Acknowledgments are gratefully made to Mrs. Margaret Sanger, director; Dr. Hannah M. Stone, medical director; and the staff of the Birth Control Clinical Research Bureau, New York City. Without their cooperation in permitting access to records and assisting in the routine of contact with patients this study would have been impossible.

We are also greatly indebted to Professor Raymond Pearl, The Johns Hopkins University, for his method of computing pregnancy rates and for advice given us in the course of this study.

²Stix, Regine K., M.D., and Notestein, Frank W.: Effectiveness of Birth Control. Milbank Memorial Fund *Quarterly*, January, 1934, xii, No. 1, pp. 57-68.

the 991 women studied became patients of the Birth Control Clinical Research Bureau, New York City, between January 1, 1931 and June 30, 1932. Because of the intensive nature of the study we could secure only a limited number of cases and it seemed desirable to select as homogeneous a group as possible. For this reason, we chose for study a group of women who were living in the Borough of the Bronx at the time of their first visit to the clinic, and were still living in that Borough when interviewed in their homes by one of us (R.K.S.). The Bronx population is dominated by a Russian-Jewish group, with people of Italian and Irish stock next in representation. It is not surprising, therefore, to find that 67 per cent of our families were Jewish and 17 per cent Catholic. The remaining families have been grouped together under the head of "Protestant and Other"—a subdivision which includes both Protestant families and those in which the husband and wife had differing religious affiliations.

It seems probable that women who showed enough interest in family limitation to attend a birth control clinic are more fertile than the general population from which they were drawn. This group of women had been married an average of 8.5 years and had had an average of 3.1 pregnancies and 2.3 living children. Most of them had lived in New York City since marriage, but more than 50 per cent of them were foreign-born and an additional 35 per cent were native-born of foreign parents. About 45 per cent of the families belonged to the white-collar class, largely clerical and small shopkeeper groups; 50 per cent were in the skilled and semiskilled classes and only 5 per cent in the unskilled labor class. In 1929, only 0.5 per cent of the husbands were unemployed, but by 1932 nearly 20 per cent of them were out of work. In 1929, the median income was \$2,270 and only four families were cared for by charity. By 1932, the median income had dropped to \$1,260 and 10 per cent of the families were supported by charity. Nearly 50 per cent of the women had

RELIGION	TOTAL YEARS EXPOSED	PER CENT OF TOTAL NUMBER OF YEARS EXPOSED TO RISK OF PREGNANCY				
		Total	Contra- ceptives Used	No Contraceptives Used		
				Total	Tempo- rarily	Habitu- ally
TOTAL	6,418.5	100.0	89.4	10.6	2.3	8.2
Catholic	911.7	100.0	80.9	19.1	1.5	17.6
Jewish	4,658.5	100.0	91.5	8.5	2.6	5.9
Protestant and Other	848.3	100.0	87.3	12.7	1.8	11.0

Table 1. Proportion of total exposure to pregnancy during which contraception was used and during which none was used, for each religious group.

had more than a grammar school education but only 4 per cent had been to college.

EXTENT OF CONTRACEPTIVE PRACTICE

Ninety-six per cent of the women in our sample practiced some form of contraception before they came to the clinic. Of the total group, 43 per cent began immediately after marriage, and 83 per cent were using contraceptives before their second pregnancy. Catholic couples were apparently less willing to resort to birth control than others. Less than 25 per cent of them, as compared with 45 per cent of the Jewish couples, used contraceptives immediately after marriage, and only 65 per cent, as compared with 87 per cent of the Jewish couples, had started to use them prior to their second pregnancy. Corresponding figures for the "Protestant and Other" group fall midway between those for Catholics and Jews.

Another aspect of the varying reactions of different religious groups to birth control is reflected in Table 1, which shows the proportion of contraceptive practice in the total experience of each group. Since our records give the history of contraceptive practice preceding each pregnancy, it is possible to classify each woman's exposure to the risk of pregnancy^a into three types:

^aExposure to risk of pregnancy is the time during which the woman was living with her husband and not pregnant. It will be defined in more detail later.

(1) Exposure during which contraception was habitually practiced; (2) that during which the couple temporarily interrupted contraceptive practice in order to have a baby; and (3) that during which the couple habitually used no contraceptive. Jewish couples had the largest proportion of exposure during which contraceptives were used, Catholics the smallest, and the experience of "Protestants and Others" fell between the two. Conversely, Catholics had the largest proportion of habitual non-contraceptive exposure and Jews the smallest. The Jewish exposure, however, included more of the temporary non-contraceptive practice than that of the other religious groups. Examination of the proportion of pregnancies occurring in each type of exposure is even more revealing (Table 2). In all religious groups, more than half of the pregnancies were accidental, but nearly 25 per cent of those in Jewish families were deliberately planned, while the proportion of "planned" pregnancies in the Catholic group was only 8 per cent, and in the "Protestant and Other" group, 11 per cent. The women who used contraception for the largest proportion of their exposure, planned the most pregnancies.

As would be expected, the practice of contraception became more common as marriage lengthened. This is apparent from each of the five sets of bars in Figure 1. Each set represents the experience of women married a different length of time at their

Table 2. Proportion of total pregnancies occurring when contraception was used and when none was used, for each religious group.

RELIGION	TOTAL NUMBER OF PREG- NANCIES	PER CENT OF TOTAL NUMBER OF PREGNANCIES				
		Total	Contra- ceptives Used	No Contraceptives Used		
				Total	Tempo- rarily	Habitu- ally
TOTAL	3,072	100.0	53.2	46.8	18.1	28.8
Catholic	640	100.1	53.8	46.3	8.0	38.3
Jewish	1,959	100.0	52.5	47.5	23.0	24.5
Protestant and Other	473	100.0	55.2	44.8	11.2	33.6

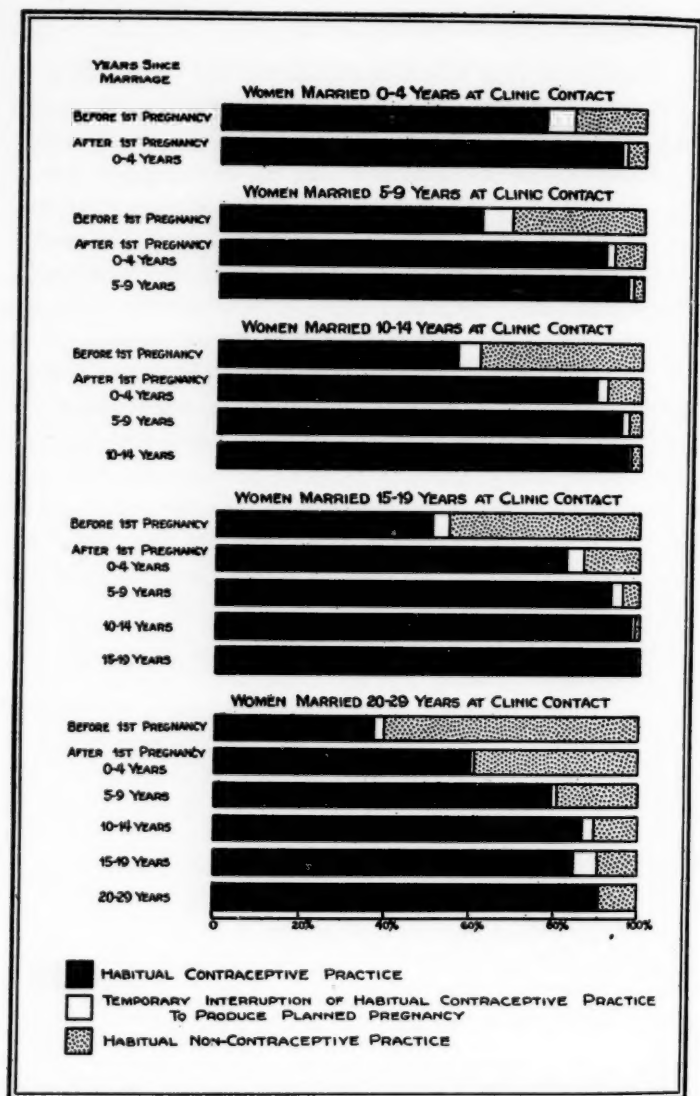


Fig. 1. Showing, for women who had been married different lengths of time at clinic contact, the proportions of total exposure during which contraceptives were used and during which none were used, in each period of married life.

first contact with the clinic. Within each set, the top bar relates to the exposure immediately after marriage, and the bottom bar to that just prior to the clinic visit. The proportion of time contraception was practiced, represented by the darkest sections, increased rapidly after the first pregnancy for each group of women.

The trend toward an increasing popular acceptance of birth control is also reflected in Figure 1, and may be seen by comparing the darkest parts of corresponding bars of each set. Those of the bottom set, representing marriages contracted between 1900 and 1910, show the smallest proportion of contraceptive practice, and those of the top set, representing the most recent marriages, show the largest. It is clear that the early practice of birth control has become increasingly common in the last twenty-five years.

METHOD OF COMPUTING PREGNANCY RATES

In this article, as in our previous one, pregnancy rates are presented for each of the three general types of exposure to the risk of pregnancy listed above.⁴ We wish to emphasize the fact that the experience of any woman may fall into one or all of these categories. The pregnancy rates for each type of exposure are not based on the experience of different women but on different types of experience of the same women. Each rate, therefore, represents the aggregate number of pregnancies resulting from 100 years of exposure of one type for the whole group.

In order to interpret the rates it will be necessary to bear in mind the characteristics of each of these three types of exposure:

(1) Exposure during which contraceptives were habitually used. The pregnancies resulting from this exposure were all "accidental," being due to careless omission of contraceptive practice,

⁴A woman is presumed to be exposed to the risk of pregnancy when she is living with her husband and not pregnant. We have, therefore, deducted from the total months of each woman's married life: (1) All separations of husband and wife of more than one month's duration, and (2) the actual number of months of gestation for each pregnancy, plus a month or a fraction of a month for the puerperal period following it. The time remaining is the total exposure to the risk of pregnancy.

See also: *Op. Cit.*, Stix and Notestein, footnotes 5, 6, and 7.

to error in technique of use, or to defect in the contraceptive itself.

(2) Exposure during which contraceptive practice was temporarily interrupted in order to produce pregnancy. This includes only the time from the cessation of contraceptive practice to conception. The pregnancies resulting were "planned." It is charac-

Table 3. Pregnancy rates when contraceptives were used and when none were used, (a) temporarily and (b) habitually.

NUMBER OF YEARS OF EXPOSURE AND NUMBER OF PREGNANCIES						
YEARS SINCE MARRIAGE	CONTRACEPTIVES USED		NO CONTRACEPTIVES USED			
			Temporarily		Habitually	
	Exp. Years	No. Preg.	Exp. Years	No. Preg.	Exp. Years	No. Preg.
1st pregnancy	423.7	174	41.8	196	202.1	542
2nd and succeeding pregnancies						
TOTAL	5,317.6	1,459	79.2 ¹	344 ¹	326.0	342
0-4	1,961.1	634	41.2	173	197.4	226
5-9	2,019.9	536	32.0	143	81.2	79
10-14	978.7	236	5.8	24	28.5	23
15-19	302.3	48	0.2	2	14.5	11
20-29	55.6	5	—	—	5.7	3
PREGNANCIES PER 100 PERSON-YEARS EXPOSURE						
YEARS SINCE MARRIAGE	CONTRACEPTIVES USED		NO CONTRACEPTIVES USED			
			Temporarily	Habitually		
1st pregnancy	41		469	168		
2nd and succeeding pregnancies						
TOTAL	27		434	105		
0-4	32		420	114		
5-9	27		453	97		
10-14	24		414	81		
15-19	16		—	76		
20-29	9		—	53		

¹This represents the total exposure and pregnancies of 277 women. Since we are primarily interested in determining the rate at which normal women conceive, we have excluded from this experience the exposure and pregnancies of thirteen cases, in which there were severe pathological conditions interfering with conception, which were later corrected. The pregnancy rate for temporary non-contraceptive exposure, for this group, was 51. Examples of the cases deleted are:

Case No. 608. Husband impotent because of severe endocrinopathy. Conception followed proper endocrine therapy. Exposure 24 months, 1 pregnancy.

Case No. 990. Conceived only after correction of a marked retroversion, cautery of cervix and inflation of tubes. Exposure 51 months, 1 pregnancy.

²Less than one year of exposure.

teristic of this type of exposure that it does not include periods of lactation or other postpartum protection. In general, such exposure occurs when conditions are most favorable for conception.

(3) Exposure during which there was habitually no contraceptive practice. Pregnancies resulting from this exposure may be presumed to occur at a normal "biological" rate since the exposure includes those protective periods which normally occur after pregnancy and during lactation. The exposure included is that from marriage until contraceptive practice began. In some cases the time was short, even as little as one month; in a few cases it included all of the exposure during the first twenty years of married life.

The rates and the data upon which they are based are shown for each type of exposure in Table 3. Those for first pregnancies are shown separately, since exposure to first pregnancy can include no period of lactation or other postpartum protection. Those for second and succeeding pregnancies are shown for five successive periods of married life. It is somewhat reassuring to find that in spite of the addition of data from 277 new records the rates are virtually identical with those presented in our first report.⁵

PREGNANCY RATES WHEN NO CONTRACEPTION WAS USED

The women conceived more rapidly when they stopped the use of contraceptives in order to become pregnant than they did when they habitually used none. This was true both for first pregnancies and for later ones. In the latter case, one cause at least is apparent. By definition, habitual non-contraceptive exposure, after the first pregnancy, includes postpartum protective periods which materially reduce the risk of pregnancy, while temporary non-contraceptive exposure does not. Even for first pregnancy, however, when the data were expressed as distributions of time re-

⁵*Op. Cit.*, Stix and Notestein, Table 3.

quired for conception, the χ^2 test indicated a significant difference. We have no evidence as to the cause of this. Possibly it is due in part to the fact that in many marriages a brief time may elapse before complete entry takes place. For women who have never used contraceptives, this time is included in non-contraceptive exposure, while for women whose non-contraceptive practice is temporary, it is included in exposure while using contraceptives.

The pregnancy rates for habitual non-contraceptive exposure decline as the duration of marriage increases. Further detailed analysis of the data is required before the cause will be clear. It is possible that the more conservative women, who continued to use no contraception in the later durations of married life, nursed their babies longer than the less conservative ones who took up birth control relatively early. It is also possible that the couples who avoided the use of contraceptive longest were less fecund than those who turned to it earlier.

The pregnancy rates for the habitual non-contraceptive exposure of the three religious groups differ very little and probably

Table 4. Pregnancy rates of different religious groups for habitual non-contraceptive exposure.

NUMBER OF YEARS OF EXPOSURE AND NUMBER OF PREGNANCIES								
	ALL RELIGIONS		CATHOLIC		JEWISH		PROTESTANT AND OTHER	
	Exp. Years	No. Preg.	Exp. Years	No. Preg.	Exp. Years	No. Preg.	Exp. Years	No. Preg.
All 1st pregnancies	202.1	542	46.4	119	119.3	339	36.3	84
Total 2nd and succeeding pregnancies	326.0	342	113.8	126	155.3	141	56.8	75
PREGNANCIES PER 100 PERSON-YEARS EXPOSURE								
	ALL RELIGIONS		CATHOLIC		JEWISH		PROTESTANT AND OTHER	
All 1st pregnancies	268		256		284		231	
Total 2nd and succeeding pregnancies	105		111		91		132	

not significantly (Table 4). In the case of first pregnancies the χ^2 test applied to the distribution of time required for conception indicated that the differences were not significant. The experience relating to second and succeeding pregnancies is small and the crude rates do not differ widely. Standardization reduces the difference still further.

A study of the rates for temporary non-contraceptive exposure shows that contrary to current belief,⁶ the ability of normal women to conceive does not decline with age in the premenopause period. In this type of exposure, we approximate an expression of fecundity. There are no variables, such as differences in length of postpartum protection against pregnancy, or differences in type and extent of contraception. We have excluded the experience of women with known pathological conditions which required extensive medical treatment before conception took place. Briefly, it may be characterized as an expression of the fundamental ability of normal women to conceive.

The rates shown in Table 3 are as high in the later as in the earlier years of married life. Moreover, when the data were expressed as distributions of time required for conception, the χ^2 test showed no significant difference in the distributions for first, second, third, or fourth pregnancies, or for women under 25 years of age as compared with women between 30 and 40 years of age. Regardless of the age of the woman or the order of pregnancy, conception occurred, in about 50 per cent of the cases, within one month, and in about 75 per cent of the cases, within the first three months of non-contraceptive exposure. So far as we know, there are no other data bearing directly on this point. Our results appear to offer for this group a denial of the accepted doctrine that ability to conceive declines with age.⁷ We

⁶See for example: Meaker, Samuel Raynor, M.D.: *HUMAN STERILITY*. Baltimore, Md., Williams and Wilkins, 1934, pp. 54 and 264.

⁷Inferences to the contrary drawn from data gathered in the nineteenth century, on (Continued on page 172)

may also regard as untrue, as far as our sample is concerned, the long abused dictum that, "For each year of contraceptive practice an additional month is required to induce conception when pregnancy is planned." These women, whose ability to conceive did not decline with age, were, by definition, regular users of contraception.

If ability to conceive does not decline with age among normal women, why does overt fertility do so? Birth rates everywhere fall off rapidly with increasing age. The answer is found in a multiplicity of causes, such as: (1) The increasing use of contraceptive methods as the wife gets older, (2) improvement in contraceptive practice, (3) higher incidence of induced abortions in late pregnancies,⁸ and (4) the increase of pelvic, endocrine, and other pathology with age. From the data presented in Table 3, it appears that increasing use and effectiveness of contraception are the most important factors in reducing the fertility of women as they grow older.

TYPES OF CONTRACEPTION USED

Before considering the effectiveness of contraceptive practice for this group of women, it is important to learn what contraceptives they used. The methods most frequently used were coitus interruptus, condom, and douche, in the order named. There was sufficient experience with alternate use of condom and coitus interruptus to classify this type of exposure separately. All other methods have been considered under one heading as "Other C+."⁹ Table 5 shows the proportion of the total contraceptive assumption that at that time contraception was not generally used, must be accepted with caution, in view of the relatively high degree of effectiveness of coitus interruptus shown in Table 8. See for example: Bromley, Dorothy Dunbar: *BIRTH CONTROL, ITS USE AND MISUSE*. New York and London, Harper and Brothers, 1934, p. 223.

⁸Kopp, Marie: *BIRTH CONTROL IN PRACTICE*. New York, McBride, 1934, Table XIII. Preliminary unpublished studies of our material show similar results.

⁹This includes safe-period, suppository, jelly, pessary, sponge, intra-uterine device, et cetera, as well as alternation of methods not provided for in any of the first four categories. It will be noted that these are mainly contraceptives for which the wife is responsible.

RELIGION	TOTAL C + EXPOSURE (Years) ¹	PER CENT					
		Total C +	Condom	Coitus Inter- ruptus	Condom or Coitus Inter- ruptus ²	Douche ³	Other C +
TOTAL	5,740.4	100.1	31.5	36.4	14.6	5.4	12.2
Catholic	738.0	100.1	21.3	40.3	10.1	15.4	13.0
Jewish	4,262.1	100.0	32.4	38.7	16.0	2.3	10.6
Protestant & Other	740.3	99.9	35.9	19.6	10.6	13.2	20.6

¹Total exposure while using contraceptives.

²Alternating.

³Plain or medicated.

Table 5. Proportion of each type of contraceptive practice in the total exposure to pregnancy during which contraceptives were used, for each religious group.

contraceptive exposure during which each of these types of contraception was used, for the whole group and for each religious group.

The choice of contraceptives varied with religion. Coitus interruptus alone was the method most frequently used by both the Catholic and Jewish families, but the second choice of Catholic couples was douche, while that of Jewish couples was condom. The "Protestant and Other" group used condom most frequently. Jewish couples showed an overwhelming tendency to place the responsibility for birth control on the male partner. Coitus interruptus and condom constituted nearly 90 per cent of their total exposure during which contraceptives were used. While in the Catholic group also, the responsibility fell largely upon the husband, it is interesting to note that during more than half of the Catholic experience with contraceptives, either coitus interruptus or douche was used. The use of these two methods requires no equipment which is not found in an ordinary household, and they can therefore be used without recourse to any agency outside the home.

EFFECTIVENESS OF CONTRACEPTION

A comparison of pregnancy rates during contraceptive practice with those occurring when no contraceptives were used

(Table 3) makes it clear that the use of contraceptives materially reduces pregnancy rates. The extent to which each type of contraception is thus effective is shown in Table 6. The rates for different contraceptives are consistently different in all durations of married life. Rates for condom are lowest and those for douche highest. Figures for the other types of contraception lie between these two extremes. Rates for each method decline with advancing duration of marriage. This trend may be due to two factors, (1) increasing aptitude in the use of a contraceptive as time

Table 6. Pregnancy rates resulting from exposure while using each type of contraceptive.

NUMBER OF YEARS OF EXPOSURE AND NUMBER OF PREGNANCIES												
YEARS SINCE MARRIAGE	TOTAL C+ ¹		CONDOM		COITUS INTER- RUPTUS		CONDOM OR COITUS INTER- RUPTUS ²		DOUCHE ³		OTHER C+	
	Exp. Years	No. Preg.	Exp. Years	No. Preg.	Exp. Years	No. Preg.	Exp. Years	No. Preg.	Exp. Years	No. Preg.	Exp. Years	No. Preg.
1st pregnancy and succeeding pregnancies	423.7	174	189.9	55	100.1	44	45.2	18	38.6	31	49.9	26
TOTAL	5,317.6	1,459	1,615.9	307	1,990.4	571	791.1	220	269.3	144	650.9	217
0-4	1,061.1	634	662.7	158	690.1	222	295.5	95	91.0	67	221.8	92
5-9	2,019.9	536	622.4	105	715.6	212	299.8	86	106.7	44	275.4	89
10-14	978.7	236	271.3	39	388.9	104	155.4	33	53.0	28	110.1	32
15-19	302.3	48	56.7	5	160.3	30	33.4	6	15.7	5	36.2	2
20-29	55.6	5	2.8	0	35.5	3	7.0	0	2.9	0	7.4	2

PREGNANCIES PER 100 PERSON-YEARS EXPOSURE						
1st pregnancy and succeeding pregnancies	41	29	44	40	80	52
TOTAL	27	19	29	28	53	33
0-4	32	24	32	32	74	41
5-9	27	17	30	29	41	32
10-14	24	14	27	21	53	29
15-19	16	9	19	18	32	6
20-29	9	0	8	0	0	27

¹All types of contraception combined.

²Alternating.

³Plain or medicated.

passed, and (2) the fact that women who became pregnant while using a given contraceptive frequently changed to one better suited to their needs, thus leaving a predominance of successful users of the first method.

There was a consistent difference in pregnancy rates when a specific contraceptive was used by different religious groups. In Table 7 we have a comparison of crude rates for second and succeeding pregnancies for each type of contraceptive by religion. Standardization of these rates does not alter them significantly. For each contraceptive and for all contraceptive experience combined, the rates for Catholics are much higher than the rates for Jews and those for the other religious groups fall between. We have no theory which will account for differences in pregnancy rates of Jews and Protestants. Further study of a larger Protestant

Table 7. Crude pregnancy rates for second and succeeding pregnancies by types of contraceptive practice, for each religious group.

NUMBER OF YEARS OF EXPOSURE AND NUMBER OF PREGNANCIES								
TYPE OF CONTRACEPTION	ALL RELIGIONS		CATHOLIC		JEWISH		PROTESTANT AND OTHER	
	Exp. Years	No. Preg.	Exp. Years	No. Preg.	Exp. Years	No. Preg.	Exp. Years	No. Preg.
TOTAL C + ¹	5,317.6	1,459	696.6	319	3,960.9	919	660.1	221
Condom	1,615.9	307	143.2	50	1,234.5	199	238.2	58
Coitus Interruptus	1,990.4	571	282.7	129	1,571.5	403	136.2	39
Condom or Coitus In- terruptus ²	791.1	220	74.7	22	641.5	168	74.9	30
Douche ³	269.3	144	100.5	73	86.4	33	82.4	38
Other C +	650.9	217	95.5	45	427.0	116	128.4	56
PREGNANCIES PER 100 PERSON-YEARS EXPOSURE								
TOTAL C + ¹	27		46		23		33	
Condom	19		35		16		24	
Coitus Interruptus	29		46		26		29	
Condom or Coitus In- terruptus ²	28		29		26		40	
Douche ³	53		73		38		46	
Other C +	33		47		27		44	

¹All types of contraception combined.

²Alternating.

³Plain or medicated.

group should throw some light on this matter. The religious ban on contraceptives may be responsible for the consistently high Catholic rates. Conscience may account for more frequent omissions as well as less careful use of a contraceptive in a group in which there may be an underlying sense of guilt when contraceptives are used.

A single figure, summarizing the effectiveness of each contraceptive as actually used, may be obtained by estimating the proportion of pregnancies prevented by the use of the method. For this purpose, we assume that if the women who used a contraceptive had never used any, they would have become pregnant at the same rate as did those women who actually never used contraception. By applying the rates for habitual non-contraceptive exposure to the corresponding exposures during which the method was used, we can estimate the number of pregnancies which we should expect under these conditions. The difference between this expected number and the actual number of pregnancies which resulted during the use of the contraceptive gives an estimate of the number of pregnancies avoided. This figure, expressed as per cent of expected pregnancies, yields an estimated ratio of effectiveness. The ratio is based on equal units of exposure to risk, which should not be confused with equal units of married life. Contraception, by its success in preventing pregnancy, increases the time during which a woman is not pregnant and therefore

Table 8. Relative effectiveness of specific contraceptives.

Type of Contraception	Ratio of Effectiveness ⁴
TOTAL C + ¹	74
Condom	83
Coitus Interruptus	72
Condom or Coitus Interruptus ²	74
Douche ³	52
Other C +	69

¹All contraception combined.

²Alternating.

³Plain or medicated.

⁴Ratio of avoided to expected pregnancies. The expected pregnancies were calculated by applying pregnancy rates for habitual non-contraceptive exposure to corresponding exposures for each type of contraceptive practice. The difference between observed and expected pregnancies yields an estimate of the number of pregnancies avoided. Virtually identical results were obtained by using pregnancy rates standardized to the distribution of exposure presented for all contraceptive practice combined in Table 3.

exposed to the risk of pregnancy. Conversely, the length of exposure of the woman who uses no contraceptives is lessened in proportion to the increase in the amount of time she is pregnant. The ratio of effectiveness of each method is shown in Table 8.

For a given period of exposure to risk of pregnancy, condom was about 83 per cent effective in preventing pregnancy, while douche prevented only 52 per cent of the pregnancies which would have occurred had no contraceptive been used. Other methods were less effective than condom, but more effective than douche. It must be remembered that these ratios do not represent the highest possible effectiveness of the contraceptives studied, but simply their effectiveness as actually used by a particular group of people.

SUMMARY

This paper presents a detailed study of the reproductive behavior of a selected group of women who attended a birth control clinic in New York City. It concerns only the pre-clinic period of their married life. The conclusions follow:

1. Virtually all of the women practiced contraception before attending the clinic. One-half of their pregnancies were "accidental," but nearly one-fifth were deliberately planned. Catholic couples were less willing to resort to birth control than Jewish couples, but the Jewish women had a much larger proportion of "planned" pregnancies than the Catholics.

2. When the women interrupted contraceptive practice in order to become pregnant, they conceived as rapidly after more than ten years of married life as they did when first married, and the ability to conceive did not decline with age or increasing order of pregnancy, in the pre-menopause period.

3. In all periods of married life, the use of contraceptives materially reduced pregnancy rates. The proportion of contraceptive practice increased with lengthening duration of marriage.

4. Pregnancy rates for each type of contraceptive practice decreased as the marriage lengthened.

5. The effectiveness of contraception varied with the method used. For a given period of exposure to risk, condom, the best of the methods studied, was about 83 per cent effective in preventing pregnancy, while douche, the least effective, reduced the risk of pregnancy only about 52 per cent.

6. All contraceptives were less effective when used by Catholics than when used by people of other religious affiliations. For this group, contraception was most effective when used by Jewish couples.

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PROVIDING PRENATAL CARE FOR NECESSITOUS WOMEN IN A RURAL NEW YORK COUNTY

by J. WARREN BELL, M.D.,¹ AND REGINALD M. ATWATER, M.D., DR.P.H.²

A PROGRAM for providing prenatal care to women in the lowest income class in a rural community has been developed with considerable success during the past three years in Cattaraugus County. While many problems remain to be solved, it is believed that the experience gained in organizing this service in a typical rural county may be of interest to others.

An experiment with a public health program in the field of maternal and infant hygiene in Cattaraugus County was undertaken in 1931 as an outgrowth of the review of the services of the Health Department made in 1930 by C.-E. A. Winslow.³ He pointed out that the work for mothers and infants was less completely developed than other parts of the program and suggested that, within the framework of this otherwise well-rounded county health program, an opportunity existed for developing an adequate service for prenatal care, which is a problem not yet solved satisfactorily in any rural area. At the invitation of the Cattaraugus County Board of Health, the Milbank Memorial Fund is cooperating with the Health Department in an effort to develop a maternity and infancy program for necessitous families along lines that draw upon the health and welfare responsibilities and fully utilize facilities provided in the New York State laws.

At the outset this special study project was focussed on the rural portions of the County where it was apparent that almost no public provisions were made for prenatal care to necessitous women. This situation prevailed in spite of relatively high ma-

¹Director of the Bureau of Maternity, Infancy and Child Hygiene, Cattaraugus County Department of Health.

²Commissioner, Cattaraugus County Department of Health.

³Winslow, C.-E. A., D.P.H.: *HEALTH ON THE FARM AND IN THE VILLAGE*. New York, The Macmillan Company, 1930.

ternal and neonatal mortality rates, especially in the lower economic levels. It also prevailed in spite of generous legal provisions for public medical care as expressed in the Public Welfare Law of the State of New York, effective January 1, 1930. This law clearly placed responsibility for medical care on welfare officials "for all persons under their care and for such persons otherwise able to maintain themselves who are unable to secure necessary medical care."⁴ It was apparent that, with increasing economic difficulty, a serious condition of social maladjustment existed in this field.

Although any pregnant woman on relief or unable to pay for medical care could apply to the local welfare officer for medical care, few knew of this legal provision and no routine procedure existed by which the County Department of Health might cooperate in bringing necessitous cases to the attention of the County Department of Welfare. To devise such a routine a series of conferences between members of the two departments concerned was arranged by the Bureau of Maternity and Infancy. The resulting technique provides that:

1. All indigent prenatal cases may make formal application for service through the Bureau of Maternity and Infancy, or the public health nurse, by signing a simple statement of her inability to pay for medical service and giving the time of expected delivery and name of physician of preference.
2. The public health nurse is to supply essential social information with regard to unemployment, income, assets, size of family, residence, et cetera, on the confidential exchange blank provided.
3. The Bureau forwards to the Commission of Public Welfare a request for prenatal care and medical service at delivery which is made out in triplicate. All three copies are sent to the Commissioner, but one is to be forwarded

⁴Public Welfare Law—Art. 10, Section 83.

to the New York State Temporary Emergency Relief Administration, and one to the welfare officer of the town in which the patient resides or has legal settlement.

4. Authorization to the physician for subsequent prenatal care and delivery may come only from the Department of Public Welfare. The Bureau of Child Hygiene is prepared to forward this authorization to the physician, retaining a memorandum for the Bureau files.

This arrangement has the advantage of providing a definite routine by which the Health Department, and more specifically, the public health nurse who most frequently comes in contact with necessitous pregnant women, may refer cases to the agency responsible under the law for providing medical care. Furthermore, it provides a channel for notifying the Department of Health when delivery service is authorized, and this information is very helpful to the public health nurse who may be carrying the case.

A prenatal medical examination by the physician of the patient's choice is authorized by the Bureau of Maternity and Infancy immediately upon receipt of the woman's request for welfare delivery service. A blank clinical record form is mailed to the physician which, when returned to the Bureau with the clinical findings, entitles him to a fee of five dollars. No prenatal clinics are held, one objective of the study being to determine the practicability of a prenatal service in a rural area carried on in the office of the private physician who is to attend the woman at delivery. The director of the Bureau does not himself make prenatal examinations except in consultation on the request of the physician. He is able, however, through personal contacts with the physicians to stimulate an interest in a high quality of service for these patients and the fee has been set at a level to encourage the physician to give his best attention.

This prenatal service has made it possible for the Health Department to initiate preventive medical supervision as soon as the

case becomes known. Through the report of the examining physician to the director of the Bureau, prompt and efficient attention to syphilis, toxemias, and other complications can be arranged. Experience with more than fifty physicians indicate that the majority of men in private practice will make and record a satisfactory prenatal examination. Knowledge that the record of their findings is to be reviewed by the director stimulates a high quality of service; and an improvement in the quality of prenatal service rendered the group of persons on a low-income level tends to encourage a correspondingly high type of service for other patients.

Continuous prenatal supervision for patients who have requested welfare delivery service is dependent on prompt authorization by the welfare official. By an agreement between the County Medical Society and the Department of Public Welfare, the physicians will give delivery care and three prenatal examinations for a fee of \$25 for a normal case. A study of the 1933 cases showed that only three days elapsed on the average between the time the Bureau of Maternity and Infancy received an application and the notification of the Department of Public Welfare. However, the average time required for the Bureau to receive an answer from the Department of Public Welfare was sixty-three days.

Of course, a large number of women were confined between the time of their application and the time when the Welfare Department found it possible to take action. It is this long interval during which it is apparent that there is the best opportunity to reduce maternal mortality, stillbirths, and neonatal mortality through the application of scientific principles. These circumstances are illustrated by the experience of 1934 during which time eighty-four applicants received their prenatal examination through Health Department channels and in each instance the Department of Public Welfare was notified in the manner previ-

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ously described. Of the eighty-four, delivery care was reported as authorized in only sixteen cases, additional but indeterminate reports having been received by the Department of Health in reference to three cases. The routine for authorization is thus seen to function satisfactorily for less than one-fourth of the applications. The sixty-one applications not as yet acknowledged by the Department of Public Welfare show valid medical reasons why such delay is exceedingly undesirable. The defect appears to be in slow response of the welfare officers rather than in the routine itself.

The majority of applications by pregnant women for medical service have been made through the Bureau of Maternity and Infancy, since the public health nurse is in contact with a very large number of child-bearing women in her district. Also, many physicians who consider their patients proper cases for medical relief have referred the patient to the Bureau. On the other hand, a number of applications are made direct to the local welfare officer, who does not at present notify the Bureau of the case. Consequently, these do not have the benefit of the prenatal service offered by the Bureau, and, when action by the welfare officer is delayed, they are deprived of all preventive prenatal service.

It is apparent that the quality of public medical service in the field of maternity and infancy is not satisfactory either to physician, patient, or public authorities. Local welfare officers, even if familiar with the authority provided by the Public Welfare Law, fail to avail themselves of it. As a result, physicians are being authorized late in pregnancy, if at all. Patients frequently have no knowledge of how to acquire the public service to which they are entitled, and a situation occurs in which a pregnant woman is deprived of prenatal care by the fact that she already owes unpaid delivery fees to each physician practicing in her area. Actual accounts of practicing physicians show that many physicians engaged by families for delivery service received little or no pay.

While it is recognized that the quality of service may not be entirely parallel to the increase in financial income for this service rendered by the physician, nevertheless it is apparent that the level of self respect for the medical practitioner can be raised by this device and that, when associated with some medical supervision of the records, there may be promoted a more intelligent and personalized interest in service to necessitous mothers.

Those who stand close to the experiment are confident that an effective way may be found to reach this especially important group of mothers and infants and indirectly to benefit other mothers and other babies, as well as the practicing physicians simply by providing a technique to implement the existing provisions of the Welfare Law. Among more than two hundred women who have had prenatal examinations at the expense of the Bureau of Maternity and Infancy and supervision from the public health nurse there has been no maternal death. Although this series of cases is too small to be entirely conclusive, there is no reason to believe that the application of scientific medicine along these lines will fail to duplicate this experience elsewhere.

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PUBLIC HEALTH NURSING SERVICE FOR INFANTS
AN ANALYSIS OF SERVICES RECEIVED BY AN UNSELECTED SAMPLE OF
INFANTS IN LOW-INCOME FAMILIES IN THE BELLEVUE-YORKVILLE
DISTRICT OF NEW YORK CITY¹

by MARIAN G. RANDALL, R.N.

A MAJOR problem for the public health nurse is how her services are to be distributed to the best advantage among the possible recipients of that service. Suggested standards for service to the individual case are set down, but in actual practice the nurse must make a compromise between reaching as many as possible of the individuals who have need of health supervision and advice, and providing the highest quality of service to the individual. Obviously, the problems of the family or individual with whom she has established a contact are vividly before her and the cooperation she may receive is a satisfying experience to the nurse. On the other hand, she has a community responsibility and must keep in mind the needs of those who may have had little or no service. Some effort to balance her program is made constantly by the nurse though she may not be wholly aware of the influences which shape her activities.

One type of evaluation of the nursing service in a community, therefore, is to determine to what extent services were spread among those in potential need and to consider the evidence that the amount of service given to individual cases indicates a well-planned distribution of the nurse's time. Some of the results of an analysis of this kind of the public health nursing service rendered to infants in the Bellevue-Yorkville District of New York City are presented in this paper.

THE SAMPLE OF INFANTS STUDIED

This study is based on data which include records of the service provided by any health agency, public or private, to every

¹From the Milbank Memorial Fund.

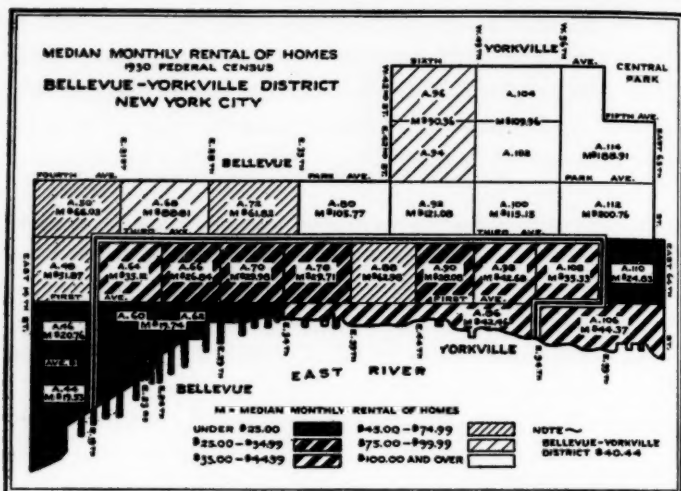


Fig. 1. Median monthly rental of homes in the Bellevue-Yorkville District, New York City, based on the 1930 Federal Census. The area outlined by triple lines indicates the section used for the special study of infant health services. Population of the area, 74,000.

infant born between July 1, 1931 and June 30, 1932 within a selected area of the Bellevue-Yorkville District in New York City.² The area selected for study is indicated in Figure 1, which also shows the median rental in 1930 of each of the sanitary areas included. Obviously this is predominantly a poor district. The homes are in four- or five-story tenement buildings, many of which are so close together that the middle rooms of the so-called "railroad" apartments are either windowless or receive practically no light from small windows on dark courts. While all of the tenement buildings have running water, many of the low-rental apartments are "cold-water flats" with bathroom facilities in the hall to be shared by all families living on that floor.

Nine hundred and sixty-eight births were registered at addresses

²If the address indicated that the family lived in one of the higher-priced modern apartment houses, it was omitted from the study, which was restricted to families of low income.

in this district, exclusive of the better type apartment houses. An immediate effort was made to visit the homes upon receipt of the record of a birth and at least one visit was made by a special investigator to the home of each of the 779 infants who constitute the sample for this study.³ Families were revisited every three months and considerable data were collected from the mothers on the health of the infant and on the amount of medical care or other health supervision received.⁴ The records from the Health Department and from private health agencies in the district were carefully checked to complete the information, and observations were made of the nurses at work in both home and clinic.⁵

Economic Status. Information obtained from the family concerning income indicated that only thirteen of the 779 families with infants had as much as \$2,000 per year, as is shown in Table 1. There seems little doubt that the 351 families, or 50 per cent of the sample, classed as very poor were unable to provide medical supervision for themselves. Further evidence of this is revealed by an analysis which shows that nearly half of these very poor families had six or more members, and a fourth of the fathers in this group were unemployed the entire year. Thus, in addition to the type of home generally encountered in this neighborhood, the low incomes reported indicate that all the infants in this sample were born into families needing some educational service and some advice and assistance in obtaining preventive

³No information was obtained for 172 infants: 100 were not found, thirty-three of whom were reported by neighbors as moved (in order to obtain hospital care for delivery, patients often give a false address or live for a short time with friends or relatives); seventy-two were born in a Home for Unmarried Mothers (women from any section of the City are accepted for delivery and babies are cared for until adopted or taken by mothers). In addition there were eighteen infants who died before leaving the hospital, who are not included in this analysis of public health nursing services.

⁴These data were from the special investigation of maternity and infancy care in the Bellevue-Yorkville District, carried on by Miss Dorothy Wichl of the Milbank Fund staff.

⁵Grateful acknowledgment is made to the personnel of the Health Department and private agency staffs whose cooperation in obtaining the information was of great assistance in assembling these data.

services and in keeping their babies well, although the need for intensive service might vary. As might be expected, over a third of the total sample of families received some aid in addition to medical services from one of the public or private relief agencies in the district. Several other families reported that friends or relatives were helping them buy food or pay rent.

Nativity of Mother. The mothers of half the sample of infants were foreign-born, and of this group the largest number (one-third) were born in Italy and the next largest number (20 per cent) were born in Ireland. Thirty-six per cent of the mothers were native-born of foreign-born parents and in this group, also, Italy and Ireland were the countries most frequently represented. Only 14 per cent of the mothers were native-born of native parentage.

THE AGENCIES GIVING INFANT HEALTH SUPERVISION

When the health demonstration sponsored by the Milbank Memorial Fund was undertaken in the Bellevue-Yorkville District, it was arranged for many of the health and social agencies to be housed in the Health Center on East 38th Street. This assisted in bringing about cooperation and preventing duplication of effort. Other agencies not housed in this building also participated in the general program for the district through frequent group conferences of the representatives of most of the district agencies.

The Official Agency. The emphasis of the Health Department infant program is put upon the services offered in well-baby

Table 1. Yearly income of families with infants in an area of Bellevue-Yorkville District, New York City.

Income	Families with Infants Reporting Each Stated Income	
	Number	Per Cent
TOTAL	702 ¹	100.0
Moderate+		
\$2,000 or more	13	1.9
Moderate -		
\$1,999-\$1,400	120	17.1
Poor		
\$1,399-\$800	218	31.0
Very Poor		
Less than \$800	351	50.0

¹Excluding 77 families for whom the income was not stated.

clinics. There are three such clinics in the district. A physician examines the babies and both the doctor and Health Department nurse advise and instruct the mother in the routine care to keep the baby well. These well-baby stations are not treatment clinics, and sick babies are supposed to be referred to a private physician or to one of the pediatric clinics in the hospitals located in the district. There were five hospital pediatric clinics in the district at the time of this study.

The Health Department nurses also make home visits to learn of home conditions, to explain the need of and urge regular medical supervision at a clinic (or by a private physician if the family can afford it), to assist the mother in carrying out a clinic recommendation and to give any further instruction needed in the care of infants. The *Manual of Instructions* for the New York City Department of Health nurses states that: "Babies under one year should be supervised in the home or the station every two weeks, but preferably at the station so that the babies may be weighed." Since it is an official agency, this service is theoretically set up for all babies, but in actual practice there is a selection of cases who receive Health Department service.

Private Agencies. Perhaps no other section of New York City has more private agencies concerned with health and welfare than the district known as Bellevue-Yorkville. These include the Maternity Center Association and the Henry Street Visiting Nurse Association, both of which give bedside nursing care in the home to the mothers and newborn infants and advise registration at the well-baby clinics, Henry Street also giving care for illness; the New York Diet Kitchen Association, which conducts an infant clinic; Prescott Memorial and Chapel of Incarnation infant clinics; and a few small private groups interested in infant welfare.⁶ Since these are private agencies they can select or limit

⁶Cooperation and service are also given by the City welfare organizations, the
(Continued on page 190)

the cases they serve according to their policies, but in general they serve the people of the district and if necessary to refuse service they refer the family to another agency.

SERVICES RECEIVED BY THE INFANTS

Volume of Service. During the period of the study, a total of 4,272 home visits for infant welfare was reported by the official and voluntary agencies (Health Department, 1,276 and private agencies 2,996), the 622 infants visited by one or more agencies having an average of 6.8 visits per infant. In addition, a total of 5,666 clinic visits was recorded (3,335 at Health Department well-baby clinics and 2,331 at private agency clinics). The 484 babies who attended clinics had an average of 11.7 clinic visits per infant. The Appraisal Form for City Health Work standard is six home visits and five clinic visits per infant registered.

Age at First Contact. The age of the infant when health supervision begins not only tends to influence the amount of service he may receive but is an index of the quality of service given in the community. If the teaching of modern methods of infant care is responsible for some of the reduction of infant mortality, the value of the health services can be increased as they are made available in the earliest period of the infant's life, when the incidence of death is highest. This qualitative measure is shown in Table 2. Fifty-two per cent of the babies born at home had a contact with one of the health agencies in the first week of life. For hospital births (69 per cent of the total sample), three-fourths of the babies had had contact with a health agency before they were a month old. That there was an opportunity for beginning health supervision in the first month of life for 74 per cent of this total sample of infants is a commendable record.

Maternity supervision is an important factor in obtaining early

Association for Improving the Condition of the Poor (A.I.C.P.), Charity Organization Society, Catholic Charities, and several other groups. The health of the infant frequently depends upon assistance from one of these social agencies.

AGE OF INFANT AT TIME OF FIRST CONTACT	TOTAL INFANTS		PLACE OF BIRTH			
			Hospital		Home	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
ANY AGE	774 ¹	100.0	532	100.1	242	100.0
Under one week	154	19.9	29 ²	5.5	125	51.6
One week	172	22.2	152	28.6	20	8.3
Two weeks but less than one month	249	32.2	214	40.2	35	14.3
One month	66	8.5	43	8.1	23	9.5
Two months	26	3.4	19	3.6	7	2.9
Three months or over	18	2.3	11	2.1	7	2.9
No supervision	89	11.5	64	12.0	25	10.3

¹Excluding 5 infants for whom the date of first contact was unknown.

²Visited in hospital by nurse from a private agency.

Table 2. Age of infants at time of first contact with health agencies in Bellevue-Yorkville District, New York City.

infant supervision. Nearly half of the mothers (47 per cent) received some prenatal supervision from Henry Street Visiting Nurse or Maternity Center Associations continuing through the postnatal period and including care of the infant. Since the services of the private agencies were considered adequate, maternity service is not included in the Health Department nurses' generalized program in this district.

Age at First Clinic Attendance. One objective of the nursing program is to assist in accomplishing early and continuous medical supervision. The age at which clinic supervision begins is also a qualitative measure indicating the opportunity afforded to give medical supervision early enough to prevent the development of malnutrition and other conditions, and increasing the opportunity to give continuous supervision throughout the infant's first year of life. As shown in Table 3, 167 of the 490 infants (34 per cent) attending clinic were registered before they were a month old. And, as indicated by the cumulative per cents, nearly three-fourths of the babies (72 per cent) were registered before they were two months old.⁷ But while 66 per cent of the infants in

⁷There were no significant differences in age at registration for the infants who attended Health Department or private agency clinics.

low-income families had some supervision from clinics, it must not be overlooked (as Table 3 shows) that 34 per cent did not attend clinic.

There is evidence of the influence of early home supervision upon early clinic registration. The private agency nurses who give newborn infants home nursing care advise mothers to register babies promptly at one of the infant clinics in the district. Those who had this early home supervision from private agencies comprise nearly two-thirds of the group registered in the clinics in the first and second months of life.

Distribution of Service to Individual Cases. The opportunity for giving health supervision to individual babies is indicated by the number of clinic or home visits they receive. The study of the distribution of services is based upon those who have completed the first year of life, and lived in the area the entire time, giving an equal opportunity for service.⁸ For such a group of 491

Table 3. Age of infants at time of first attendance at baby health clinics in Bellevue-Yorkville District, New York City.

AGE AT FIRST CLINIC ATTENDANCE	INFANTS FIRST ATTENDING CLINICS AT SPECIFIED AGE		
	Number	Per Cent	Cumulative Per Cent
ANY AGE	490	100.0	
Under one month	167	34.1	34.1
One month	184	37.6	71.7
Two months	62	12.6	84.3
Three to six months	60	12.2	96.5
Six months to one year	17	3.5	100.0
Total infants	738 ¹	100.0	
No clinic attendance	248	33.6	
Attended clinics ²	490	66.4	

¹Excluding 12 infants who left the district before they were two weeks old and 29 infants who first attended hospital pediatric clinics but age of first visit is unknown.

²Including Health Department Well-Baby Clinics and Infant Clinics sponsored by private agencies.

⁸There were 283 infants classified as discharged. The nineteen babies who died in the first year of life and the 230 who moved did not complete the first year of life in the district. Ten attended clinic outside the district, four were in a day nursery, two were in hospitals most of the year, three mothers refused supervision, and the others for various reasons were out of the district considerable time during the year, eliminating the opportunity for continuous supervision.

infants, the distribution of total home visits, total clinic visits, and Health Department services describes, in the following paragraphs, this phase of the actual experience in carrying out the health program of the area.

Distribution of Home Visits. There were fifty-two, or 11 per cent, of the infants visited once during the year, 102, or 21 per cent, who received from two to five visits, and 268, or 55 per cent, who had six or more visits. This includes home visits by both official and private agencies.⁹ The private agencies give frequent newborn care visits and two-thirds of the infants who were in the group receiving six or more total visits had this early supervision. Two hundred and seventy-one (55 per cent) infants were visited by more than one agency, and 66 (14 per cent) received no home visits from any public health nurse.

Distribution of Clinic Services. Using as a standard the Health Department policy of "supervision every two weeks, preferably in the Baby Health Station," the distribution of clinic visits was analyzed according to the age of the infant at registration. For example, if a baby first attended a clinic in his tenth week of life, the standard would call for twenty-two clinic visits in his first year. For purposes of this analysis, if this baby actually attended twenty-six times, it would be classed as plus 4; or if he attended eighteen times, as minus 4, by comparison with the standard. This is shown in Table 4 for the infants who attended both private agency or Health Department clinics. There were twenty-two infants who had ten or more visits over the standard, and these babies had a total of 774 clinic visits, which was an average of thirty-five visits per infant and constituted 14 per cent of the total clinic service given for this group. At the other end of the scale, one-third of the babies received ten or less visits below the standard. This group received an average of eight visits per infant,

⁹Including visits for newborn care but excluding morbidity service given later in the infant period.

NUMBER OF CLINIC VISITS AS COMPARED WITH STANDARD ¹	INFANTS ATTENDING CLINICS ²		CLINIC VISITS		AVERAGE VISITS PER INFANT
	Number	Per Cent	Number	Per Cent	
TOTAL	484 ³	100.0	5,648	100.0	11.7
10 or more over standard	22	4.5	774	13.7	35.2
9-5 over standard	24	5.0	733	13.0	30.5
4 over —4 under standard	81	16.7	1,727	30.6	21.3
5-9 under standard	74	15.3	1,139	20.2	15.4
10 or less under standard	160	33.0	1,275	22.5	8.0
No visits	123	25.4			

¹Based on age of infant at time of clinic registration and the Health Department policy of clinic attendance every two weeks in first year of life.

²Includes Diet Kitchen, Prescott Memorial, and Chapel of Incarnation Clinics and three Health Department Well-Baby Stations.

³Excluding 7 infants for whom the date of registration or number of visits was unknown.

Table 4. The attendance at baby clinics in Bellevue-Yorkville District, New York City, by comparison with a standard for frequency of clinic visits, for infants who had completed their first year of life in low-income families.

which is considerably higher than in many cities. And yet 25

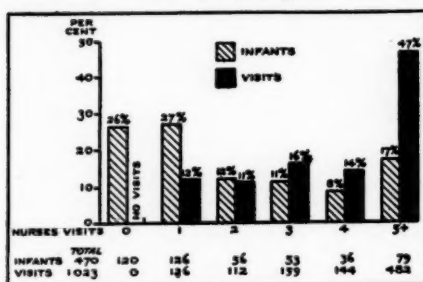


Fig. 2. Distribution, according to the specified number of visits, of the total home visits by health department nurses compared with the total infants who received these visits during the first year of life. For example: 26 per cent of the infants were not visited; 11 per cent were visited twice, which constituted 12 per cent of the visits; 17 per cent had five or more visits, which added up to 47 per cent of the total visits.

per cent of the infants had no clinic supervision. The distribution of total visits by Health Department nurses and the dis-

tribution of the total infants who had completed the first year of life are illustrated in Figure 2, showing that:

26 per cent of the infants were not visited

per cent of the infants had no clinic supervision.

Distribution of Health Department Services.

Since the administration of the health program is usually related to the official agency, further discussion of distribution of services may be appropriately confined to Health Department activities.

The distribution of total visits by Health Department nurses and the dis-

27 per cent of the infants received one visit which constituted 12 per cent of the total visits

17 per cent of the infants were visited five or more times which added up to 47 per cent of the total visits

The knowledge of how visits are distributed might suggest to the nurse that some of the 47 per cent of the visits could be more profitably given to some of the infants in the "not visited" group.

From the records of the Health Department baby clinics an analysis of the distribution of clinic visits shows (Table 5) that 49 per cent of the infants had no supervision while 7 per cent had 35 per cent of the total clinic service.

In this distribution of both home and clinic visits, twenty-one infants not served by the official agency were excluded, because for these infants there were records in the Health Department showing that supervision was being given by private agencies. If the nurse knows and records the fact that other agencies are assuming responsibility for the health of an infant, it may be considered equivalent to giving care and crossed from her list. This illustrates a most important point, namely, that it is the

Table 5. Distribution of visits to Health Department baby clinics for an unselected sample of infants who had completed their first year of life, in low-income families, in Bellevue-Yorkville District, New York City.

NUMBER OF CLINIC VISITS	NUMBER OF INFANTS HAVING EACH AMOUNT OF CLINIC SERVICE	TOTAL VISITS TO CLINIC	PER CENT OF INFANTS HAVING EACH AMOUNT OF SERVICE	PER CENT OF TOTAL SERVICE
TOTAL	470 ¹	3,335	100.1	100.0
None	232	0	49.4	
1-4	43	102	9.1	3.1
5-9	46	322	9.8	9.7
10-14	52	627	11.1	18.8
15-19	30	495	6.4	14.8
20-24	29	626	6.2	18.8
25-29	17	458	3.6	13.7
30+	21	705	4.5	21.1

¹Excluding 21 infants for whom there was a record in the Health Department of supervision from other agencies in the district.

responsibility of the official agency to plan for the distribution of health services. It does not mean that the official agency must actually render all the service, but know what is being done.

For a sample of 125 infants who received some supervision from a private agency in the district, there was a record in the Health Department for twenty-five, or 20 per cent, showing that another agency was giving care. The cooperation of agencies is successful to the degree that it plans for the services of all the people who need them, and this actual infant service illustrates a practical application of cooperation.

Immunizations. Since an objective of the program of nursing supervision is to assist in securing immunizations, the actual use of preventives is also one measure of results. It is of interest to find that 39 per cent of the infants who completed the first year of life had received protection against diphtheria. For the infants who attended clinics 49 per cent were immunized, but only 15 per cent of those who did not attend clinics received protection. Seventy-three babies (15 per cent) received vaccination against smallpox.

While cod-liver oil is not actually classed as an immunization, it was regularly advised in the infants' diets, and may be used as an indication of a desirable result of health supervision. Information from the mothers at the time of the investigator's home visits revealed that 189 of the infants (38 per cent) had cod-liver oil at some time during the year, but twenty of these had it less than two months.

Illness. Information from the family revealed that 127 infants had no illnesses. The remaining 364 infants had one or more illnesses in the first year of life. Some of these were only slight disturbances, so that sicknesses reported were tabulated as major or minor illnesses.¹⁰ In Table 6, the incidence of illness is represented by a total of the two most important illnesses reported for

¹⁰This arbitrary grouping is also based on the record of severity of the illness. When
(Continued on page 197)

TYPE OF CARE RECEIVED ¹	FOR 589 ILLNESSES		FOR 296 MAJOR ILLNESSES		FOR 293 MINOR ILLNESSES	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Private physician	98	16.6	64	21.6	34	11.6
Hospital	48	8.1	37	12.5	11	3.7
Hospital clinics	73	12.4	45	15.2	28	9.5
Health Dept. baby clinics	320	54.3	134	45.3	186	63.5
Home visits Henry Street nurse	57	9.7	35	11.8	22	7.5
Home visits Health Dept. nurse	14	2.4	3	1.0	11	3.7
No care	31	5.2	18	6.1	13	4.4

¹Each type of care as here used is mutually exclusive.

Table 6. The extent of different types of care received for the illnesses that occurred in the first year of life for a sample of infants in Bellevue-Yorkville District, New York City.

each infant. The extent of care received is shown in this table, each type of service as here given being mutually exclusive. In other words, an infant may be included in one or more of the classifications.

When it is remembered that the infants are all in low-income families, it is of interest to find that 22 per cent of the major illnesses had some supervision from private physicians. Most of the hospital care was given at City hospitals. The Henry Street Association does not refuse home nursing service if the family cannot afford to pay for care. Since the Health Department nurses do not give morbidity care most of the cases they visited were communicable disease or sickness which the nurse found when visiting the home for another reason. The large number of illnesses given some advice at the Health Department clinics is not surprising when it is remembered how often many of the infants attended clinic. The mother returned when the baby was sick,

of relatively slight duration and severity, such illnesses as vomiting, cough or cold, red throats, skin rash, stomach upset, and the like were classed as minor; while intestinal disturbances, acute respiratory, communicable disease, acute ear conditions, and the like were classed as major illnesses.

the clinic physician advised her of some immediate care necessary and often referred her to another service. The services are listed independently, not showing which of the major illnesses advised at the Health Department clinic were also given service from a hospital or private physician. The fact remains, however, that frequently service was sought from the well-baby clinics when the babies were ill.¹¹

Extent of All Health Services. A summary of the foregoing analyses for the total sample of infants who completed the first year of life is shown in Table 7. It illustrates the extent to which these infants received the different types of services available in

the district. As given here an infant may be in one or more of the groups. In fact, over a third of these infants received services from both public and private agencies. It is significant to find that there were only thirty-one babies (6 per cent) who had no health supervision in this district where so many services were available.

Infants Who Had No Supervision. Fifteen of these thirty-one infants were born in hospitals, and the other sixteen at home. A physician attended all births, and all were reported normal. As classified within the total low-income group, ten were in rela-

Table 7. Extent to which health services were received by infants who had completed the first year of life in low-income families of Bellevue-Yorkville District, New York City.

Services Received	Infants Receiving Each Specified Service	
	Number	Per Cent
TOTAL	491	100.0
No public health service	31	6.3
One or more services	460	93.7
Agency giving service		
Health Department	380	77.4
Private Agencies	352	71.7
<i>Type of Service</i>		
Infant clinics		
Health Department clinics	256	52.1
Private Agency clinics	144	29.3
Hospital pediatric clinics	104	21.2
Home Visits		
Health Department nurses	349	71.1
Henry Street nurses ¹	108	22.0
Maternity Center nurses	193	39.3

¹Excluding visits for morbidity service.

¹¹Infant mortality will be discussed in another paper.

tively moderate economic circumstances, twelve were poor and six very poor. Seven of the mothers were primipara. Four of the infants were immunized against diphtheria by private physicians, and two were vaccinated for smallpox. There were twenty illnesses in the group, nine of which had some service from a private physician. In the families of eight of these infants, another member of the family received some service from the Health Department, and a nurse visited the school child in five of these homes.

SUMMARY

An analysis of the public health nursing services for a sample of infants born in a low-rental area of Bellevue-Yorkville District of New York City shows that the public and private services were extended to all but 6 per cent of the infants in these low-income families.

The facilities of the private health agencies added to those of the Health Department make an unusual amount of service available in this district, but over a third of the sample of infants had an amount of service in excess of the most liberal standards.

Undoubtedly some infants need frequent supervision but there is need for a careful selection. As shown in this study, 17 per cent of the infants had 47 per cent of the total home visits and 26 per cent of the infants were not visited. If the nurse knows how her services are being distributed, it would suggest that a visit to the infants in the "not visited" group might be substituted for some of the repeated visiting to the infants receiving such a large proportion of the available service. The same principle applies to clinic services. Forty-nine per cent of the infants did not attend clinics and 7 per cent of the infants had 35 per cent of the total clinic service.

Supervision in the home for the newborn infant is a factor in obtaining early clinic registration. In using this information, the Health Department nurse might decide that one early home

visit to as many as possible of the newborn infants might be more productive for a greater number in insuring early clinic supervision than repeated visits to a limited number of infants in the community.

The age of the infant at the time of first supervision is a qualitative measure of health services. For the sample of infants studied there is the commendable record of 74 per cent having some health supervision in the first month of life.

In this analysis the reports of services received show an unusual record of extent and amount of health supervision for some infants. By careful planning for the distribution of the available services it would be possible to give a more equal opportunity for all infants who need it to have health supervision and to reach the small number in the low-income families who have not yet received supervision.

Since births are reported and the Health Department has access to copies of these reports, case-finding, theoretically, is no problem in infant health work. Practically, it means that, especially in low-income districts, every birth must be followed up and then classified according to need for service.

The official agency should assume the responsibility for all infants until they know and record that health supervision is being received from some other source.

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A PROJECT IN RURAL SCHOOL HEALTH EDUCATION

by RUTH E. GROUT

V. HOME-SCHOOL RELATIONSHIPS¹

THE school and the home are immediately responsible for the health of the school child. Outstanding among the problems which they must share are those connected with the provision of a safe and sanitary environment, the encouragement and opportunity to live healthfully, the correction of remediable defects, and the development of a well-balanced personality which readily makes mental and social adjustments.

An attempt to establish home-school relations conducive to such a program has been an essential part of the rural school health education project in Cattaraugus County. The one- and two-teacher schools around which this project has developed are usually found in sparsely settled, open-country neighborhoods where agriculture, and more especially dairying, is the major industry. Recent surveys have shown that at the present time the farmers in these areas are struggling under a tremendous economic burden with many acres of submarginal land of low soil productivity in their possession² and inadequate incomes as the reward for their endless labors.³

The homes of rural school children vary widely. An appreciable number of families are living in mere shacks tucked away in the hills and eking a precarious living from non-productive land. Others are tenant families who lack permanency in the community. They drift from farm to farm and their children from

¹From the Cattaraugus Supervisory School Hygiene District and the Milbank Memorial Fund. This is the fifth in a series of papers by the director of the health education study in Cattaraugus County.

²New York State Planning Board: State Planning for New York. Albany, New York, New York State Planning Board, January, 1935.

³Hood, Kenneth: Report of a Farm Management Survey in Cattaraugus County, 1933-1934. New York State College of Agriculture, Ithaca, New York, December, 1934.

school to school. Fortunately there is a substantial number of self-respecting farmers traditionally described as conservative and independent, yet resourceful and loyal. Many of their homes still are far from modern. They may lack electricity, the telephone,⁴ the daily newspaper and even sanitary conveniences.⁴ Professor Kenyon Butterfield,⁵ in contrasting rural and city life has said, "City life goes to extremes; country life while varied, is more even. In the country there is little of large wealth, luxury and ease. Farmers are essentially a middle class. There is many a farm home, plain to the extreme, devoid of the veneer, a home that to the man of the town seems lacking in all the things that season life," but a home where "virtue, intelligence, thrift and courage" are firmly implanted.

The degree to which community organization has developed also differs greatly. Some communities are so loosely jointed that, for such purposes as the unified support of a school health program, they are ineffective. At the other extreme they may be strongly knit into articulate and public-spirited groups. Within the past few years fundamental changes have been occurring in the characteristic qualities of rural neighborhoods. This is well portrayed in a recent article by William G. Mather, Jr.,⁶ describing a village of south-western New York State and its outlying rural districts. Improvements in transportation and highways, the radio and cooperative enterprises have been among the influences making the rural individual more conscious of his civic responsibilities, both to his immediate community and to larger social and economic units. Kolb and Brunner⁷ have pointed out in

⁴Wiehl, Dorothy G.: Sanitary Conditions in a Rural Area of Cattaraugus County. *The Milbank Memorial Fund Quarterly Bulletin*, April, 1932, x, No. 2, pp. 137-150.

⁵Phelan, John: READING IN RURAL SOCIOLOGY; Butterfield, K. L.: THE POINT OF VIEW IN COMPARISONS OF CITY AND COUNTRY CONDITIONS. New York, The Macmillan Company, 1922, Chapter V.

⁶Mather, Jr., William G.: Littletown. *Harper's Magazine*, January, 1935, Vol. 170.

⁷President's Research Committee on Social Trends: RECENT SOCIAL TRENDS IN THE UNITED STATES; Kolb, J. H., and Brunner, Edmund de S.: RURAL LIFE. New York, McGraw-Hill Book Company, 1933, Vol. I.

RECENT SOCIAL TRENDS IN THE UNITED STATES that "Isolation is no longer a characteristic of this section of society. Its people, its occupations, its institutions and its organized group life have become interdependent with the rest of society, while still preserving an integrity of their own. . . . The country man is experimenting with a social life with more than one center and with more than one set of interests. He is altering his immediate local organization, recognizing himself all the while as a part of the village community."

In such changing and varied open-country communities, home-school relationships have been fostered as a part of this school health education project. When the support of the home has been enlisted, much has been accomplished, not only in the primary function of improving the health of the school child, but also in community unification.

Various approaches have been used by rural teachers of the County in their effort to strengthen home-school relationships in matters of health. Individual contacts at home or at school, group contacts through community clubs or school parties, and indirect contacts through children or the public health nurse are commonly employed. An alert teacher will depend upon a variety of methods, studying each individual situation to determine the most effective line of approach. One young rural teacher, herself from a farm home, has philosophically written, "In home-school relationships nothing can be accomplished except through the bond of friendship. 'Visit the homes,' the teacher is advised. Invite yourself, if necessary, I suppose, but if you've never seen ten new pigs and you 'take a little boy up' on his invitation to see them you've scored higher. Country people are proud and it is insulting to patronize them or treat them as you would children. They have indomitably good spirits and complain much less than their more fortunate city cousins. They want understanding but not nearly so much sympathy as some people think.

"There is a good deal of difference between courage and sound diplomacy. If there were only some miracle by which a teacher might receive in a single night the wisdom and clearness of vision that comes from years of experience—but then the spice would be out of the sauce, would it not?"

If every rural teacher had the insight of this young girl of twenty-two there would be little need for concern on the ultimate development of harmonious and effective home-school relationships. However, teachers are often immature and inexperienced and lack confidence in themselves to assume genuine leadership. Another deterring factor has been the large annual turnover of rural teachers, which has prevented the continuity of the program so necessary for sound growth. As long as the single trustee system persists in rural districts of New York State whereby a teacher has uncertain tenure of office and may be hired or fired by the trustee, at the whim of the faction in control, accomplishments will be limited. These facts, coupled with certain inherent qualities of rural communities suggested above, make the establishment of effective home-school relations difficult.

Many bright spots have been seen in these years that health work has been promoted in rural schools, despite the fact that much of what has been planned still remains uncompleted. Before this special health education project, now in its fourth year of development, was started, the public health nurses and teachers continually sought the support of the home in many phases of the school health work. If the present program has made any new contribution it has been largely in the direction of clarifying the teacher's responsibilities in the promotion of lasting home-school relationships. In the following paragraphs an analysis will be made of certain phases of the program in which some progress has been made by teachers in linking home and school.

The hot lunch for a rural school provides tangible and worthwhile activities for joint participation. When already prepared

lunches are provided by individual parents the teacher's part is largely educational. When a hot dish is prepared at school cooperative action under teacher leadership is more essential. Usually the children take turns bringing the food from home, uncooked or partially prepared and complete its preparation at school. Occasionally parents have been invited to the school to help serve the lunch. When this happens a fine spirit of service toward the school is built up in the community. One teacher tells about her experiences with this method as follows:

"Last year we carried on a food project, emphasizing preservation of food in the fall and planting of gardens in the spring. This was directed toward the end that the materials for our hot lunches might be all home-grown products.

"The lunches were a practical means of teaching food values, correct dietary habits, new ways of cooking foods, table manners, and ways of setting the table, as well as indirectly teaching cooperation, social poise, and school pride. The menus were planned by the children and the work at school was all done by them.

"In many cases the parents asked for recipes for the dishes their children liked at school and many of the children discovered how well some foods like spinach, beans, beets, and carrots really tasted. The mothers were very much interested in this work and often offered us the best of assistance. They also borrowed the reading material about food which we had found and listed."

For a number of years parents have been encouraged to attend annual medical inspections at school for the purpose of discussing first hand with the doctors any deviations from normal in the health of their children. After the inspection a written report of conditions found by the doctor is relayed through the teacher to the parents of each child. The nurse does the major part of the follow-up work to obtain needed corrections, but the teacher, through the educational program at school and contacts with parents, may exert an appreciable amount of influence.

Improvements in the school buildings and equipment are best brought about when school and community work together under the guidance of the district superintendent. Often the decisions of the trustee and the district to make repairs or alterations are influenced by the educational program carried on by the school and those associated with it. Numerous instances have been cited in previous articles where this has occurred. Sanitary improvements in practically 60 per cent of the schools for each of the past three years bespeak the degree of success obtained through joint action of school and community.

The every day health behavior of an individual child is determined by influences of both home and school. Obviously, the ideal situation exists when the child is given opportunity and encouragement to live healthfully throughout the day by a consistent and harmonious program under guidance of both teacher and parent. The public health nurse has done much to strengthen relations in a community by interpreting these groups to each other. Children, too, are conveyors of ideas between home and school but not always on the side of harmony. It remains for the teacher to take the leadership in a program of unification. This she increasingly is doing in a variety of ways.

One teacher with a large school of over thirty children writes: "I brought up the question of hot lunches at a meeting of the Mother's Club. Everyone was willing to cooperate. I was offered an oil stove and an old radio cabinet with a shelf in it for a cupboard, as well as dishes and silver.

"In connection with our school we publish a school paper. Every month we have a health column which contains news about our health projects and the like. This is another medium to reach parents and other residents of the district, as each family receives a copy."

In one district "the children in different families take home the health magazines *Junior Home* and *Hygeia* each month. We

go over the articles when the new magazines come in and check those we think would be interesting for each family. During oral discussions we let the children report any comments the parents make. For example, we have a new baby in our district. Any articles about child care, infant feeding, et cetera, are checked for the mother. Through her older boys we hear what suggested things she tried and the outcomes."

Another teacher reports that the "parents are invited to the meetings of the School Club which are held every two weeks. During that time we stress health through showing our work, giving talks concerning health, et cetera." In another community the teacher carries on "health work with the parents during lecturer's hour at the Grange," while in still another "the teacher often visits the homes trying to see each at least twice a year. At that time not only the doctor's report but also social habits are discussed with the parent. Parents are invited to the medical inspections and they are included in the parties of the school."

At the present time stimulus to strengthen home-school relations is being given to teachers in numerous ways. The recent extension of training requirements and improvement in training courses for rural school teachers in neighboring normal schools is resulting in the gradual introduction of more adequately prepared teachers. In-service assistance has been given in several directions. Extension courses from a nearby normal school have reached some teachers. In Olean a discussion group of rural teachers on home-school relations under the direction of the State supervisor of child development and parent education has been in progress for several months. Occasionally the problem has been discussed at group meetings in other sections of the County. The "Handbook of Health Education," prepared by County teachers, contains numerous descriptions of ways in which teachers have successfully integrated their health program with the home and community. It is hoped that the revised Handbook will include

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many more. Bulletins with suggestions for linking home and school activities have had wide distribution. The individual conference on specific problems between teacher and nurse, district superintendent, another teacher, or the health education supervisor has been a method commonly used.

The bonds between home and school in rural areas will gradually be strengthened as rural people learn through education and experience the value of cooperative activity. It is hoped that the school health education program will be an important influence in this direction and through this service find its own best expression.